

viewed: AutoDesk Animator; Micro Logic; FX Fighter; 133MHz Pentium and more!

PC ANSWERS

CD-ROM EDITION



September 1995 • issue 19

Also available with HD disk

Dream machines

20 fantastic PC upgrades

War of the words
Which Windows word processor?

Digital cash
We investigate the new money

The new Café Society
Behind the scenes at an Internet café...



On the CD-ROM

Blocks • Bobby Fischer Chess • Bubba • Chadwick • Cheat Sheet CD Special • Code Room Files • Cold
reams • Dungeon Master 2 • Elastic Reality • Fab Four • Fine Words • Fonter v7.0 • ForeHelp v2.0 •
MacTint • FX Fighter • Grind • Help Browser • Hex Viewer • Hi-Octane • Juggle Crazy • Klik and Play •
Library • Mario Teaches Typing • McAfee Scan for Windows • MicroLogic • NBA Live 95 • Odell Down Under
Perfect General 2 • PhotoVision • Play and Learn - Shapes • Print Artist • Prisoner of Ice • SmartSurf •
Space Quest 6 • SuperMemo • Word Express • Wordstar • 3D Construction Kit

**Windows 95:
Beginner's guide**

**Elastic Reality:
PC graphics have
never been so much fun**

£4.99

future
PUBLISHING
Your guarantee
of value





Wearnes Computers

THE WEARNES 486 EXECUTIVE IS "A WINNER"

PC PLUS MARCH 95

WEARNES 486 EXECUTIVE

This award winning system is specifically configured to meet the needs of today's busy executive and demanding home user. It is easily upgradeable and continues to outperform even in the most demanding environment.

- Desktop Case
- 256k Cache
- 4MB RAM
- 540MB Hard Drive
- 1MB VESA Local Bus Graphics Accelerator Card
- VESA Local Bus IDE Controller
- Power Saving Mode
- 3.5" Floppy Drive
- 102 Key Keyboard
- 14" Super VGA Monitor
- MS DOS 6.22, Windows 3.11 & Mouse
- PFS WindowWorks & Bodyworks
- 12 Months On-Site Maintenance

£729

DX4/100

FULL MULTIMEDIA UPGRADE KITS WITH DUAL SPEED CD-ROM, 16BIT SOUND CARD, STEREO SPEAKERS AND 4 FREE CD-ROMS ONLY...£190

TAKE THE WEARNES 486 V.I.P. ADVANTAGE

WEARNES 486 V.I.P. ADVANTAGE

The very latest high performance advanced PCI Tri-Bus system from Wearnes incorporates a host of features for increased speed and power saving. This system dramatically speeds up graphics performance which can be further enhanced with an upgrade to a Diamond Stealth Graphics Accelerator*. Hard Disk performance is vastly improved with Enhanced IDE support (allows four host interface devices) and this model also features integral Power Management, making it a Greener PC. With all the features that the new Wearnes 486 VIP offers, you know you have made the right investment to save you time, money and even the Planet!

- Wearnes V.I.P. Tri-Bus Motherboard
- Award Bios
- 4 x PCI Slots, 3 x 16Bit ISA Slots and 2 Shared x VLB Slots
- 256k External Cache
- 8Mb (72pin) RAM
- Type 3 Zif Socket for Pentium P24T Upgrade
- 2 Fast 16550 UART Serial Ports, 1 High Performance Parallel Port
- Enhanced IDE (PIO Mode 3) Hard & Floppy Drive Controller
- 3.5" Floppy Drive
- 540Mb Hard Drive
- Industrial Strength Mini Tower Case
- Five Drive Bays (2 x 3.5" & 3 x 5.25") for upgradeability
- 200W Switchable PSU (TUV Approved)
- Cirrus 1MB Graphics Accelerator
- 14" SVGA .28 Dot Pitch Non-Interlaced Colour Monitor
- 102 Key Keyboard and 3 Button Microsoft Compatible Mouse
- MS DOS 6.22, Windows 3.11 (Pre-loaded, including disks and Manuals)
- PFS WindowWorks (A Fully Integrated Business Package)
- Bodyworks 3.0
- 12 Months On-Site Maintenance

£899

DX4/100



DX2/66
£659



PC PLUS
MARCH '95



PC TODAY
APRIL '95



WHAT PC?
MAY '95



WHAT PC
NOMINATED
JUNE '95

CREDIT PRICE
FROM **£26 PER MONTH**
36 Months, 19.9% APR, 10% Deposit.



DX2/66
£849

Fully Installed Multi-Media Upgrade with 4 CDs including Microsoft Encarta and Works... Add £190

* 1MB DIAMOND STEALTH PCI GRAPHICS ACCELERATOR + £35

PLEASE CONTACT OUR EXPERIENCED SALES TEAM TO DISCUSS YOUR REQUIREMENTS

01895 430 888

MORE
SYSTEMS
OVERLEAF





WORLD LEADING TECHNOLOGY

WORLD BEATING PRICES

WORLD CLASS QUALITY



Wearnes
Computers

Contents

Features

24 Digital cash

Electronic money is fast, efficient and doesn't rub a hole in your pocket. But just how safe is digital cash? PCA investigates

32 Dream machine

You want the best add-ons and peripherals for your PC? You got it. Here's 20 fantastic – and somewhat expensive – PC upgrades. Dream on...

42 War of the words

Which Windows word processor is right for your wallet? Find out as we test seven of the best programs available

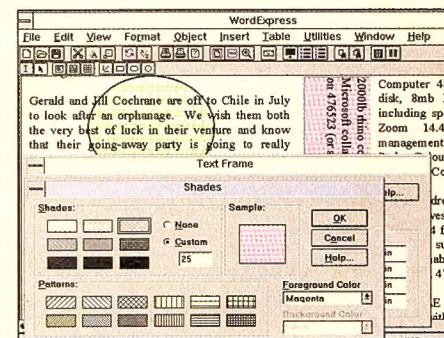
46 The new Café Society

The Internet café is the hip place to be in the wired up '90s. Steve Bough has tea and buns while trawling the World Wide Web



War of the words

What's the best Windows word processor money can buy? Find out in our head-to-head group test
See page 42



News and views

17 News

The latest news, views and gossip from around the world. Microsoft comes under fire over Windows 95; Lotus snapped up by IBM; 133MHz PCs unveiled. Read it here first

41 File Open

Is technology stifling talents we once took for granted? Steve Patient attempts to blame his PC's spellchecker for his social inadequacy. Yeah, sure Steve

50 Letters

Here's the magazine equivalent of a soapbox and loud hailer – your letters answered

63 Baud Walk

Who pays the bills for the Internet? Wendy Grossman dials all the right numbers

114 Great Debate

Is the PC a valid means of artistic expression or simply an electronic Etch-a Sketch on steroids? You decide

Projects & technical help

53 The electronic postbag

An e-mail address isn't just a status symbol, it's an essential communications tool

56 Windows 95 User Profiles

Customise your Windows desktop with User Profiles, one of the new features of Windows 95. Steve Patient shows you how

58 3D Construction Kit

Create your own 3D world with our guide to using SuperScape's 3D Construction Kit – presented free on this month's CD-ROM

60 Code Room

Dave Jewell shows you how to create a clock that tells the time the way you do. No more of that PC precision, this one tells you it's nearly a quarter past eight, or just coming up to tea time.

102 Ask the experts

Four men, one mission. Steve Patient and his motley crew of PC experts are on-hand to help solve all your computer-related problems. So relax and take it easy – help is only a letter or an e-mail away

Reviews & previews

65 Reviews

Abandon hope all ye who enter here, for there's a wealth of great PC hardware and software just waiting to do your bank balance some serious damage

82 Shareware

Save pounds and pick up quality software into the bargain, as we review and rate the best of the recent crop of shareware releases

86 Education

Direct your own PC movies, play with shapes and take a trip round *Wonder Land*

88 Game reviews

Argonaut's 3D beat-'em-up, *FX Fighter*, and Microprose's *Star Trek* are the two big heavyweight games featured this issue

Regulars

9 PC Answers CD-ROM and Disk

Find out what's on this month's disks. Plus all the help you could possibly need in getting your CD-ROM and HD Disk up and running

39 Win more than £1,500 of kit

These are the things that dreams are made of. More hardware than the US Navy

98 Subscriptions

Don't take chances. Subscribe to *PC Answers* and save money. Can't be bad

100 Special offers and back issues

Track down those elusive back issues and check out our special money-saving offers

113 Win an Iomega Zip Drive

Five Iomega Zip Drives are up for grabs and the winner could be you. Never have a data storage problem again

Digital cash

Is a cashless society an idle dream or a realistic possibility? And just how safe is e-money, anyway?
PC Answers investigates
See page 24



Dream machines

Transform your humble PC into a dream machine with our essential guide to 20 fantastic PC upgrades. Turn to page 32

The new Café Society

Internet cafés are all the rage. And here's how to setup your very own Web'n'buns emporium. See page 46

Reviews

Elastic Reality	page 66
Autodesk Animator Studio	page 71
MicroLOGIC	page 73
QuickTax '95	page 74
TaxCalc '95	page 74
3D Atlas	page 77
MagnaRAM	page 78
WinProbe 3	page 78
Mario Teaches Typing	page 80
Haight-Ashbury in the Sixties	page 80
Winstation 133	page 77

Shareware

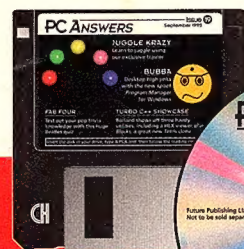
Juggle Crazy	page 82
Future Dimension	page 82
Cold Dreams	page 83
Fab Four	page 83
SmartSurf	page 84
Fonter	page 84

Education

Director's Lab	page 86
Wonder Land	page 87
Playing with Shapes	page 87

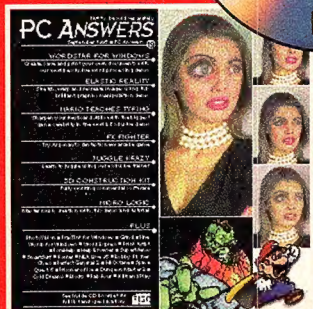
Games

Star Trek: The Next Generation	page 88
FX Fighter	page 89
Micro Machines 2	page 90
Hi-Octane	page 93



Turn over the page for CD-ROM and Cover Disk details

Exclusive! *WordStar for Windows* • One of the world's top word processing programs comes to the PCA CD-ROM
 Exclusive! *Juggle Crazy* • Want to learn how to juggle? Follow our easy tutorial and become an expert
Elastic Reality • An excellent image manipulation program that lets you stretch, warp and distort digital images
FX Fighter • It's the best beat-'em-up on the PC and we've got a fully playable demo. It really packs a punch
3D Construction Kit • Create your own stunning 3D vistas with this fully working commercial program
Mario Teaches Typing • Finger-twisting fun with this demo that helps enhance your typing skills
 Plus! More than 20 great PC programs to help you squeeze more fun out of your machine





CREDIT PRICE
FROM **£37 PER MONTH**
36 Months, 19.9% APR, 10% Deposit.

DX4/100
£1029

NOW WITH 8MB RAM AS STANDARD



CREDIT PRICE
FROM **£55 PER MONTH**
36 Months, 19.9% APR, 10% Deposit.

DX4/100
£1475

UPGRADE OPTIONS

530MB	£99	Internal 14.4 Fax/Modem	£99
16MB RAM (from 8MB)	£199	16-Bit SoundCard	£75
PCMCIA Ethernet Adapter	£145	Spare Battery	£69
PCMCIA 14.4 Fax/Modem	£210		

SOFTWARE INCLUDED IN THE PRICE

PFS WINDOWWORKS

A top rated integrated package containing 7 superb applications for business and home use including:

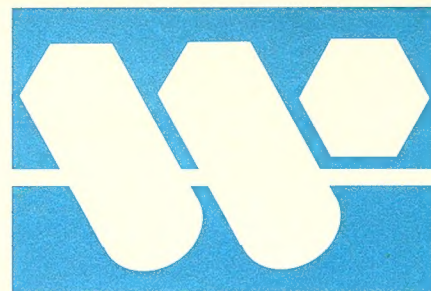
- First class **WORD PROCESSOR** including desktop publishing features
- Powerful **SPREADSHEET** with instant **CHARTMAKER**
- Extensive **DATABASE** for data tracking and management
- Personalised **ADDRESS BOOK**
- **LABEL MAKER** for producing labels, mail merging and addressing envelopes
- Complete with **FAX MODEM SOFTWARE** to allow you to instantly fax all of your data & information to colleagues & friends.

BODYWORKS 3.0

Discover the miracle of the human Machine. Colourful, comprehensive graphics guide you on a fascinating journey through the human body. Magnified views and cut aways reveal even the most elaborate cell structures. Learn all about the body, from the Aorta to the Zygomatic bone!

All software pre-loaded and ready to run. Disks and manuals available for a small extra charge.

MORE SYSTEMS OVERLEAF



WEARNES 486 MULTI-MEDIA PRO

Equally versatile at home or in the office. This feature packed, fully upgradeable system allows you to enjoy all the benefits of the latest, educational, entertainment and business software.

- Desktop Case
- 256k Cache
- 8MB RAM
- 540MB Hard Drive
- 1MB VESA Local Bus Graphics Accelerator Card
- VESA Local Bus IDE Controller
- Power Saving Mode
- Wearnes CDD-110 Dual Speed CD Rom
- Wearnes Beethoven ADSP-16 Stereo Sound Card
- Power Beat Speakers & Microphone
- 4 CDs Including Microsoft Encarta, Works, Scenes & Entertainment
- 3.5" Floppy Drive
- 102 Key Keyboard
- 14" Super VGA Monitor
- MS DOS 6.22, Windows 3.11 & Mouse
- 12 Months On-Site Maintenance

£959 **DX2/80**

WEARNES 486 INNOVA NOTEBOOK

Take your business into a new dimension with this superior lightweight (2.8Kg) notebook incorporating a HiMH battery which gives up to four hours continuous use for the professional on the move. The Innova is an intelligent notebook which automatically configures to CPU & Hard Drive upgrades and has an optional Sound Card Module which is ideal for presentations. An internal Fax/Modem (with Voicemail Software) is also available, this can turn your notebook into an answering system and fax forwarding service.

- Crisp Clear 10.3" Dual Scan Colour Screen
- 8MB RAM
- 1MB VLB "RocketChip" Graphics
- 340MB Hard Drive
- IBM 82 Key Keyboard
- 3.5" Floppy
- 2 Type II or 1 Type III PCMCIA Slots
- Ergonomically Positioned 19mm Trackball
- Advanced Power Management including Instant Suspend & Resume
- Full LED Status Readout
- Sockets for External Monitor, Keyboard & Mouse
- Built-in Microphone & Intelligent Speaker
- MS DOS 6.22, Windows for Workgroups 3.11 (Pre-Loaded and Including Disks & Manuals)
- PFS WindowWorks (Integrated Business Package)
- Complete with Carrying Case & Charger

£1399 **DX4/75**



BUSINESS FINANCE IS ALSO AVAILABLE ON ALL SYSTEMS

Free On-Site Maintenance

All systems come complete with one year On-Site maintenance (except Notebooks) carried out anywhere in the mainland U.K. by our team of expert engineers. This On-Site maintenance agreement is upgradeable for advertised systems at time of purchase.

PERIOD	COST
1 YEAR	FREE
2 YEARS	£59
3 YEARS	£129

Other options are available such as 4 hour response for mission critical systems. Please phone for more details

Errors & Omissions excluded. Pentium is a trademark of Intel Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. All prices and configurations are subject to change without notice or obligation. All prices are quoted in Sterling and exclude carriage and VAT.

Wearnes Computers

WEARNES POWER SYSTEM

The ultimate power package for the serious professional and specialist home user. This PCI based system will prove indispensable for specialist CAD and Scientific applications and is the platform to take your computing requirements into the 21st Century

- Mini Tower Case
- 256k Cache
- 8MB RAM
- 850MB Hard Drive
- 1MB Diamond Stealth 64 PCI Graphics Accelerator
- 3.5" Floppy
- 102 Key Keyboard
- 15" Super VGA 0.28 Dot Pitch MicroProcessor Controlled Monitor
- MS DOS 6.22, Windows 3.11 & Mouse
- PFS WindowWorks & BodyWorks
- 12 Months On-Site Maintenance

£1149 **pentium**
P75

**FULLY INSTALLED MULTI MEDIA UPGRADE WITH 4 CDs,
INCLUDING MICROSOFT ENCARTA AND WORKS ONLY £190**

NETWORK SOLUTIONS

Whether your requirements are to install the first network into a small company, or to network every department of a large corporate, Wearnes Computers can offer you the complete network solution.

With prices starting from as little as £2995 for a complete, fully installed and maintained network system, Wearnes can solve your networking problems at a price you can afford.

Our network specialists will be happy to guide you through all the options, ensuring you get the solution which is tailor made for your particular business application.

Starter Pack 1 3 User Non-Dedicated Fileserver

- 486 DX4/100, Non-Dedicated Fileserver (8MB RAM, 850MB HDD, Tape Streamer and Network Card)
- 2 Off 486 DX2/66 Workstations (8MB RAM, 420MB HDD, Network Card)
- HP Deskjet 540 Printer
- MS DOS 6.22 & Windows for Workgroups 3.11
- All Cabling, Installation and Delivery
- All Systems Supplied with Keyboard, Monitor and Mouse

£3750*

Starter Pack 2 4 User Novell Dedicated Fileserver

- Pentium P75 Dedicated Fileserver (16MB RAM, 1GB HDD, Tape Streamer and Network Card)
- 4 Off 486 DX2/66 Workstations (4MB RAM, 420MB HDD, Network Card)
- HP LaserJet 4L Printer
- MS DOS 6.22, Windows 3.11 & Novell 3.12 (5 User)
- All Cabling, Installation and Delivery
- All Systems Supplied with Keyboard, Monitor and Mouse

£6250*

* Subject to site survey.



P75	P90	P100	P120
£1149	£1249	£1349	£1599



**FOR NETWORK SOLUTIONS PLEASE CALL
OUR SPECIALIST NETWORK DIVISION**

01895 430 123

System Upgrades

15" Monitor (From 14")	+£90	RAM Upgrade per 4MB	+£110
850MB	+£65	14.4 Internal Fax / Modem	+£80
1GB (From 850MB)	+£45	NE2000 Compatible Combo Network Card	+£40

Please call the Sales Hotline for other systems and component upgrades not listed

All systems include:

- 14" Low radiation MPRII non-interlaced, 0.28 dot pitch monitor.
- MS DOS & Windows pre-loaded, all disks & manuals Included.
- Lifetime warranty. (1st year on-site, then labour only).
- Lifetime hotline technical support.

WE HAVE A SELECTION OF SYSTEMS READY FOR IMMEDIATE DISPATCH
PLEASE CONTACT THE SALES TEAM FOR YOUR REQUIREMENTS

SALES OFFICE OPEN 9AM - 6PM

01895 430 888

AT OUR BRAND NEW SHOWROOM (HOURS 10AM - 5PM) PLEASE CALL FOR AN APPOINTMENT.

Wearnes Thakral (UK) Limited, Stockley Close, West Drayton, Middlesex,
UB7 9BL. Fax: 01895 430777 e-mail: wtuk@cix.compulink.co.uk



- More Sound
- More Dynamics
- More Value
- More Fun

NuSound PnP

New Sound for Today's PCs

Forget the snap, crackle and hiss of old sound technology. Experience the brand-new sound of NuSound PnP.

Soundpower for Gamers

OK, we admit it, we love playing too! That's why we paid particular attention to making NuSound PnP a gamer's delight and we reckon we've succeeded 100% compatibility because NuSound PnP understands your need for all the important sound standards, including SoundBlaster Pro. Nearly 400 vibrant, dazzling sounds, and with a 3D spatialiser we'll put you right in the middle of the action.

High-End Audio Built-in

But not forgetting the budding maestros amongst you, NuSound PnP hosts features your home Hi-Fi equipment would love; features such as 64 times oversampling, high signal/noise ratio and improved bandwidth. All of which means greater precision at high frequencies and impressively punchy bass notes.

You can even expand the sounds and drumkits further with our WaveBooster add-on cards.

Finally, we've added Panasonic and IDE CD-ROM interfaces. The Plug and Play installation and no driver with Windows 95, means you'll be up and playing with our complete audio software bundle in no time at all.

And at an amazing £129 we bet you'll be up and running down to your nearest Orchid dealer today.

- Plug and Play compatible
- Hi-Fi quality with 18-bit Wavetable
- Nearly 400 musical instruments

Orchid – Simply more Sound



CD-ROM & Disk

Getting Started

CD-ROM

- Insert the *PC Answers* CD-ROM into your CD-ROM drive.
- In Windows, select Run from the File menu.
- Type in the drive letter of your CD-ROM drive followed by `:install.exe` in the Command line edit box.
- The *PC Answers* menu is then installed and a new *Program Manager* group created. The latter contains the *PC Answers* menu icon.
- Double click on the *PC Answers* icon to start the menu and get at all the brilliant software on this month's CD-ROM.

Floppy disk

- Insert the *PC Answers* floppy disk into your floppy drive.
- Change to the floppy drive.
- Type **PCA** to get at the great software on this month's disk.

What's on this month's CD-ROM

This month's CD-ROM is crammed with top quality software for you to try out. Whatever your tastes, you're guaranteed to find something fun, interesting and helpful.



WordStar for Windows 2.0

page 11

- WordStar for Windows 2.0
- Word Express
- Fine Words for Windows



Games

page 12

- Space Quest 6
- The Perfect General 2
- Prisoner of Ice
- Bobby Fisher Teaches Chess
- Dungeon Master 2
- Hi Octane
- NBA Live 95
- FX Fighter
- Cheet Sheets CD



Elastic Reality

page 10

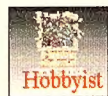
- Elastic Reality



Creativity

page 10

- 3D Construction Kit
- PhotoVision Pro
- MicroLOGIC
- Fractint for Windows
- Grind
- Klick 'n' Play
- Astro Force



Hobby

page 13

- Turbo C++ 4.5 Sample Applications
- Help Browser
- ForeHelp 2.0
- Bubba
- Print Artist
- Super Memo



Education

page 13

- Playing with Shapes
- Mario Teaches Typing
- Odell Down Under
- Chadwick and the Sneaky Egg Thief



Shareware

page 13

- Juggle Krazy
- Cold Dreams
- Fab Four
- Fonter 7.0
- SmartSurf



Library

page 14

- McAfee VirusScan for Windows
- Microsoft Word 6 Internet Assistant
- Ask the Experts
- Code Room
- Boot Disk Builder
- Visual Basic Primer Edition
- Windows 32-bit extensions
- MPEG player
- Video for Windows version 1.1e



Showcase

page 11

- Flaming *PC Answers* demo
- MIDI music file
- Tip of the month
- Letters+

Elastic Reality



This top-quality morphing package is the choice of the professionals. It's capable of

all kinds of digital image manipulation with just a few mouse clicks. *Elastic Reality* has been used in the production of feature films, television, rock videos, multi-media and commercials. Now you can try it yourself.

- 1 Double click on the *Elastic Reality* Demo icon to start.
- 2 When the program has loaded, select Open from the File menu. A window opens.
- 3 Select PRES.ER from the Open Project dialog box.
- 4 Select Render Full Effect from the Render menu.
- 5 An .AVI file called PRES.AVI will be created – this takes some time.

- 6 When the effect has finished rendering select Play Movie from the Render menu. Media Player opens and PRES.AVI is loaded.

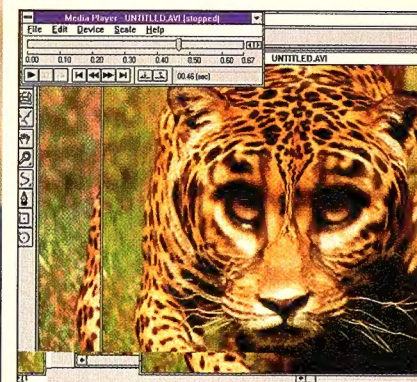


- 7 Click on Media Player's Play button to see the finished effect. Amazing, eh?



Softline

- 0181-401 1234
- £292.58
- Out now



◆ This top-quality morphing package enables you to create, among other effects, grotesque caricatures!

Creativity



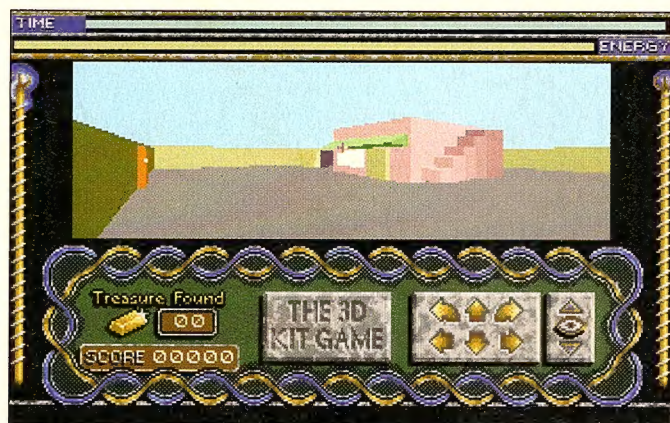
This month you can create your own games, modify image files and more... with 3D Construction Kit

3D Construction Kit

This wonderful, fully-working commercial program enables you to create your own fully-functioning games. Let's dive in at the deep end and create a masterpiece.

Creating your first game

- 1 From DOS change to your CD drive.
- 2 Type 3DCK. The program will now be installed to your hard drive.
- 3 Change back to your hard drive.
- 4 Change to the \3DKIT directory.
- 5 Type 3DKIT. Select the options which best describe your PC from the startup screens, and 3D Construction Kit will start up.



◆ Create your own worlds with 3D Construction Kit

- 6 Select Load Data from the File menu. A window opens.
- 7 Click on the DATA directory
- 8 Click on VGAGAME.KIT
- 9 Click on OK

Wait while the file is loaded.

- 10 Select Load Border from the File menu
- 11 Click on C:
- 12 Click on 3DKIT
- 13 Click on BORDERS
- 14 Click on KGVGAPIC.LBM
- 15 Click on OK. Wait while the file is loaded.

- 16 Select Make from the File menu
- 17 Click on C:
- 18 Click on 3DKIT
- 19 Click on RUNNERS
- 20 Click just to the right of File:
- 21 Type in PCA and press [Return]
- 22 Click on OK. Wait while the file is loaded.

- 23 Select Quit from the File menu
- 24 Change to the \3DKIT\RUNNERS directory

- 25 Type in RUNVGA PCA.RUN
- 26 Play the game!

Check out the 3D Construction Kit project on page 58. You can also buy the complete manual for just £8.95 – turn to page 100 for our special offer.

PhotoVision Pro

Is *PaintShop Pro 3.0* the best shareware image manipulation program? We're not too sure any more. *PhotoVision Pro* covers the same ground but makes it all a lot easier.

The Thompson Partnership
• 01889 564601 • £54.70
• Windows 3.1

PhotoVision Competition

Five lucky readers will shortly be the proud owners of registered copies of *PhotoVision Pro*. To become one of the fortunate five, just answer this one simple question: What are the three primary colours used by a PC's colour monitor?

Answers on the back of a postcard or stuckdown envelope before September 5 to : PhotoVision Pro Compo, PC Answers, 30 Monmouth Street, Bath, Avon, BA1 2BW

MicroLOGIC

Create your own MIDI tunes with our great MicroLOGIC demo. Make sure you choose the Compatible option when setting the program up if you haven't got MIDI kit available – or you won't get to hear anything.

Sound Technology • 01462 480000
• £99 • Windows 3.1 – soundcard

Fractint for Windows

Artistically impaired? No matter – you can still create dazzling patterns based on fractal mathematics. This program uses a special programming trick to carry out complex calculations at high-speed. It produces fractal images and uses integer mathematics, hence the name – *Fractint*.

The Stone Soup Group • Free
• Windows 3.1

Grind

◆ Boogie on down with *Grind*



This is the most innovative MOD sound file-player around. The *PC Answers* menu installs the program to your hard drive but you have to exit to DOS, change to the correct directory, and type GRIND <filename> to use it. The <filename> should be any valid MOD file. Try out the supplied song – type GRIND FACTRAVE.S3M.

Independent • Free • Soundcard

Klick 'n' Play

Create Windows games in hours – rather than years – using *Klick 'n' Play*. With our great demo you can create complete games – the only limitation is you can't save them. We've also included a range of wonderful games for you to try.

Europress Software • 01625 859444
• £49.99 • Windows 3.1

Astro Force

Now you've created your own game using *Klick 'n' Play* you can see just what the full package is capable of. *Astro Force* runs directly from the CD. Just click on the *Astro Force* icon and it's instant oblivion for everything that gets in your way. Happy gaming!

Klick 'n' Play • Free • Windows 3.1

WordStar for Windows 2.0

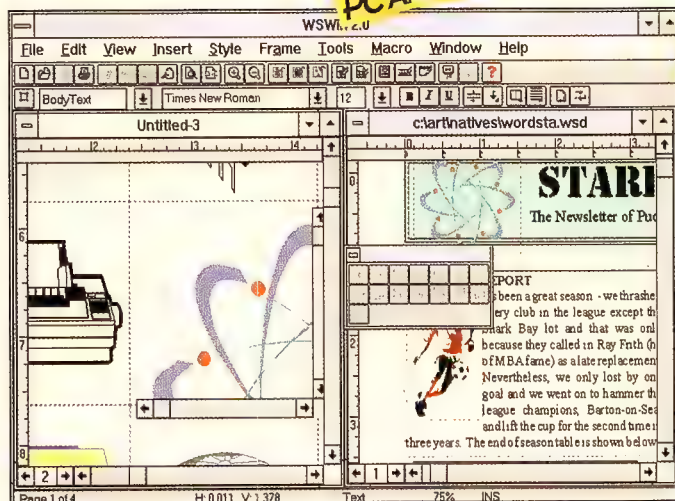


A range of superb word processors for you to try out

RECOMMENDED
PC ANSWERS

Our world exclusive demo version of WordStar for Windows is great. Softkey – which owns WordStar – didn't have a demo available for us to give you... so we made our own.

As our demo is a PC Answers creation tailor-made for the CD-ROM, you can be sure it's special. Naturally, Softkey wouldn't let us give you the entire program – as much as we'd have liked to. Our demo can do almost all the things that you'd want to do with a word processor. You can save, print and type and use all the features apart from the Spell Checker, Thesaurus, Grammar Checker, Mail List, and most of the macros. Other than these restrictions, this demo will work perfectly – forever. Use it to send a letter to us here at PC Answers.



◆ Our world exclusive demo of WordStar for Windows enables you to create your own desktop published documents

WordStar for Windows in action
Included on the CD in the \WPS directory is the file we used for testing WordStar in our roundup on page 40. To have a look at the file yourself follow these simple steps...

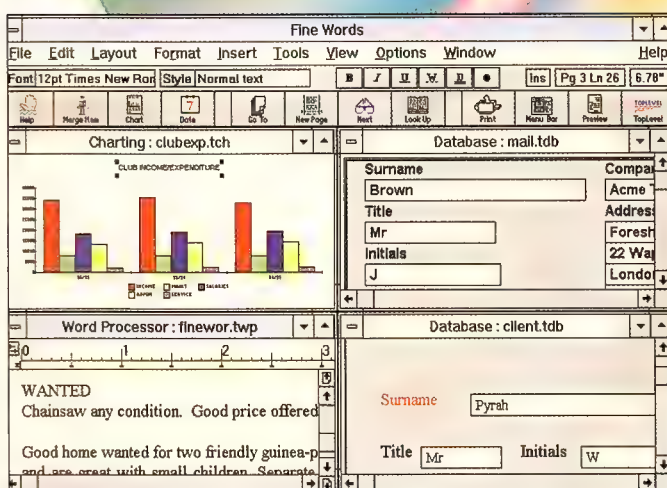
- 1 Double click on the WSWin 2.0 icon to start up the WordStar for Windows 2.0 demo.
- 2 Select Open from the File menu. A window opens. Make sure the file type is set to Document.
- 3 Change to your CD-ROM drive using the Drive list box.
- 4 Change to the \WPS directory in the Directories list box.
- 5 You will see the file WORDSTA.WSD in the Filename list box.
- 6 Double click on the file to load it.

See page 100 to upgrade to the full version of WordStar for Windows 2.0 for a paltry £19.99, and check out how it fared in our word processor roundup starting on page 40.

Softkey International • £49.99
• 0181-789 2000 • Windows 3.1

FineWords for Windows

RECOMMENDED
PC ANSWERS
Toplevel's Fine Words for Windows is superb. You can use



◆ FineWords for Windows allows you to see multiple documents on screen at the same time

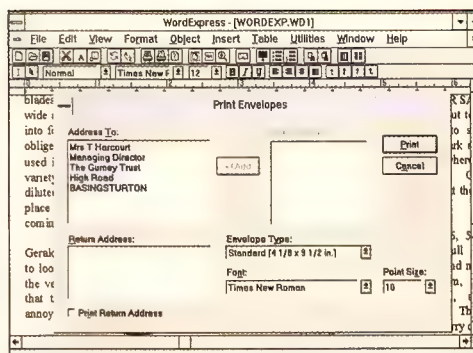
the demo version for 50 hours – that's 50 hours of typing, printing, saving and so on. Fine Words includes database and charting modules.

Toplevel • 01453 753955 • £29.99
• Windows 3.1

Word Express

RECOMMENDED
PC ANSWERS
The world's best Windows shareware word processor was a natural inclusion in our roundup. Word Express is a super word processor with all the facilities you need for home use.

The Thompson Partnership • £48.83
• 01889 564601 • Windows 3.1



◆ Print your own envelopes for really professional results with Word Express. Remember, presentation is everything...

Word Express Competition

Five lucky readers will soon be the proud owners of registered copies of Word Express. Want to be a winner? Just answer this simple question and it could be you next: Which PC magazine cover mounted a world exclusive version of Word Express back in October 1994?

Answers on the back of a postcard or stuckdown envelope by September 5 to : Word Express
Compo, PC Answers,
30 Monmouth Street,
Bath, Avon, BA1 2BW

Showcase

Here's another clutch of your fellow readers' contributions for your delectation...

Letters+

Write to Letters – see page 50 for details – and your letter will probably end up here, too. You could win a superb prize, too.

Flaming PC Answers

Steven Dunn's great little demo is exactly that – great. To run the

program, change to your CD drive, then to the \SUBS directory and type PCANSWER.

Tip of the month

Alan Gotto sent this really handy little tip in to Showcase. Alan wins the fully registered version of Rise of the Triads for his troubles. Well done.

MIDI music

This super little ditty by David Green is dead cool. You can listen to it by loading it into Windows' Media Player. Relaxing music to listen to while you write your winning entry!

Get ready for an avalanche of prizes...

PD Selections – 01474-325 802 – is the UK distributor of many of the best shareware titles available. PD Selections like PC Answers so much they've decided to give us the fully registered version of a top quality shareware title as a prize for one lucky reader. Any submission to Showcase stands a chance, so get creating your winning entry now!

This month's winner is Alan Gotto for his brilliant little tip. Alan wins the fully registered version of Apogee's superb Rise of the Triads. Congratulations!

In next month's issue you could be the winner of the fully registered version of Cold Dreams – try out the demo included on this month's CD to find out why you should enter!

Games



Another fantastic collection of some of the best games around for you to try

Dungeon Master 2



◆ Venture into Skull Keep in *Dungeon Master 2*... if you dare

In its previous incarnation, *Dungeon Master* revolutionised computer RPGs – role playing games. Now the oft imitated original is back. *Dungeon Master 2* features 256 colour graphics and a soundtrack. There's a superb atmosphere and puzzles throughout. Our demo features the first stage of *Dungeon Master 2*. Can you get into Skull Keep? If you can, you might wish you hadn't dared.

How to play

From DOS change to your CD drive. Type **DM2**. The program will now be installed to your hard drive. The game then starts. It's all mouse controlled, so get clicking!

Interplay • 01235 821 666 • £ 44.99
• 486 – 4 Mb RAM

FX Fighter



BRENDER is big news in the games development world. Finally someone's created a brilliant game with it – *FX Fighter*. The graphics are stunning and the CD-ROM soundtrack is astounding.



◆ Beat your opponents to a pulp in *FX Fighter*

How to play

From DOS, change to your CD drive. Type **FXINST**. The program will now be installed to your hard drive. A set-up screen now appears. After you've told it what soundcard you've got, make sure the CD drive is correctly specified or you miss out on the CD soundtrack. Type **FIGHT** to start the game. Prepare to pummel flesh.

Keys

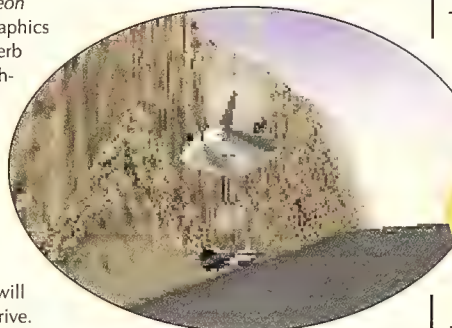
Attack C
Retreat X
Duck Z
Jump A
Punch V
Kick Q

If you don't like this little lot you can change them from the options menu.

Check out our full review on page 87
GTE Interactive Media • £39.99
• 0171-911 3000 • 386 – 4 Mb RAM

Hi Octane

Bullfrog, who consistently produces some of the best games around, has done it again. *Hi Octane* is a great racing game with out-of-this-world graphics – if you've got the ninja PC required to handle it.



◆ Go for a quiet drive – and kill everything that moves in *Hi Octane*

How to play

From DOS change to your CD drive. Type **HIOCTANE**. The program will now be installed to your hard drive. Then it's time to take a spin!

Keys

Left [Left]
Right [Right]

Brake [Down]
Accelerate [Up]
Turbo C
Missiles X
Mini-gun Z

Check out our full review on page 93
Bullfrog • 01753 549442 • £44.99
• 486DX2/50 – 4 Mb RAM –
2x CD-ROM drive

NBA Live '95

The intro sequence of *NBA Live '95* blows your socks off. When you eventually get to the game you may feel cheated by the low resolution in-game graphics – don't be! The game is supremely playable.

How to play

From DOS change to your CD drive. Type **NBA** and get ready to dunk some hoops! Great fun.

Keys

Pause game ESC
Move normally Arrow keys
Turbo (fast) mode [INS] +
Arrow keys
Pass/Switch player. [SHIFT]
Shoot/Jump [ENTER]

EA Sports • 01753 549442 • £44.99 •
486DX/33 – SVGA – 2x CD drive
– 8 Mb RAM

Prisoner of Ice

The sequel to *Daughter of Serpents* scored 86 per cent in last month's review – order your back issue on page 102 if you missed it. Find out what all the fuss was about with our super demo.

How to play

From DOS change to your CD drive. Type **ICE320** to play the low resolution version of the demo. Type **ICE640** to play the SVGA version of the demo.

It's all point and click – so get pointing and clicking.

Infogrames • 0171-738 8199
• £44.99 • VGA – 386 – 4 Mb RAM
– CD-ROM drive

Bobby Fisher teaches chess

Learn how to play chess like a true master with this brain-tingling demo.

US Gold • 01216 253366 • £29.99
HD/£34.99 CD • 4Mb – VGA 386

Space Quest 6

Roger Wilco is back. Sierra's latest outing into the pointy clicky world of adventuring has a massive demo – you'll love it.

How to play

From DOS change to your CD drive. Type **SQ6** to install the game. Type **SQ6DEMO** when the installation has finished to start the game.

Hint

When the game has loaded, you may end up wandering around the room you start off in with no apparent way out. Just off centre towards the top of the screen there are two small buttons under something that looks suspiciously like a hairdryer. This is the transporter system. Click on Hands and then on the buttons to get to other parts of the demo.

Sierra On-line • 01734 303322 •
ETBA • 486 – 4 Mb RAM

The Perfect General 2

Find out if you've got what it takes to make the top brass with our demo of *The Perfect General 2*. From DOS change to your CD drive. Type **PG2** to install the game. Change to the \TPG2DEMO directory on your hard drive and type **TPG2DEMO** to start.

Mirage • 01260 299909 • £44.99
• 386 – 4 Mb RAM – CD drive

Cheet Sheets

The highly popular electronic monthly has hit CD-land at last. The *Cheet Sheets* CD is a superb collection of zillions of great gaming tips. From DOS change to your CD drive. Type **CHEET** to begin browsing the tips and cheats. You'll be a gaming wizard!

Eurowave Leisure

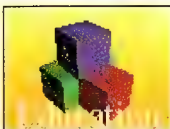
• 0171-251 4888
• £19.95 • 386



They've hit the stern, Captain!

◆ His supernatural glow would suggest he's just wolfed down a bowl of oatly breakfast cereal, but it's only the reflection of his two-bar electric heater

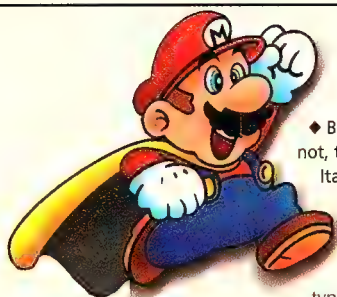
Education



Educate your children and yourself with our wonderful selection of software

Mario Teaches Typing

Nintendo's most famous icon makes an outing into PC-land to teach you to



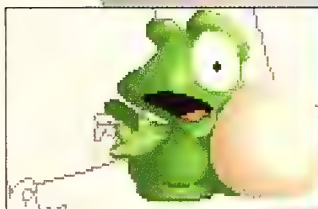
◆ Believe it or not, they've got Italian plumbers to double up as typists

type. From DOS change to your CD drive. Type **MARIO** and get typing – faster.

Interplay • 01235 821666
• £29.99 • 286 for HD – 386 for CD

Chadwick and the Sneaky Egg Thief

This brilliant learning tool designed for your children is one you might enjoy



◆ Good grief. Chadwick isn't the most attractive character – but kids love him

yourself. *Chadwick and the Sneaky Egg Thief* is very amusing! From DOS change to your CD drive. Type **EGG** to start the program.

Guildsoft • 01752 895100
• £35.83

Playing with Shapes Your PC is a powerful learning tool. Put it to good use, let the youngsters learn their shapes. From DOS change to your CD drive. Type **Shape** to install the program. Follow the on-screen instructions to start the program.

VCI Software • 01923 255558
• £24.99

Odell down Under

Aquatic fun aplenty in this undersea educational game.

Iona Software • 00 353 1 836 6328
• £34.95 HD/£19.95 CD

Shareware



The best of today's shareware for you to try out

Cold Dreams

We imported this superb new game from Immortality at the very last moment – mere hours before we made the CD – just for you to try out! *Cold Dreams* is a dazzling reworking of the timeless classic *Gods*. It's a wonderful game you're sure to really enjoy.

How to play

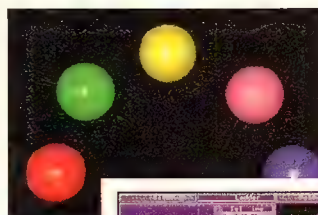
From DOS change to your CD drive. Type **COLD**. When the game has loaded, press [F1] to find out the keys you need to play the game.



◆ Try out this exclusive *Gods* spin-off

PD Selections • 01474 325802
• £20 • 386 – 4 Mb RAM

Juggle Krazy



◆ Pretty patterns that really do teach you how to juggle

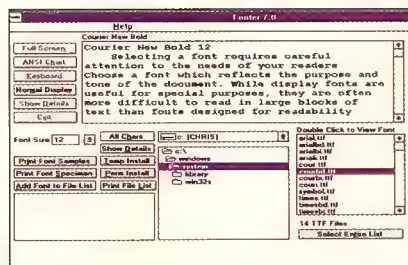
Please turn to the floppy disk details on page 14 for more info

Fab Four

Please turn to the floppy disk details on page 14 for more info

Fonter 7.0

Thanks to *Fonter 7.0* you need never install a font just to find out what it



◆ Get your letters just right with *Fonter 7.0*. It really is a time-saving program

looks like – only to find that it's totally unsuitable for your work. You can now view them before you install them, saving you a lot of hassle.

Ososoft • 00 1 805 529 1759
• £20 (approx £13) • Windows 3.1

SmartSurf

Find out how much you're contributing to BT's profits with *SmartSurf*. Then adjust your modeming habits to reduce your bill.

Oakley Data Services • Free
• Windows 3.1 – modem

Hobby



Another roundup of the best in the way of useful, weird, or wacky software

ForeHelp 2.0

Creating your own help files is simple with *ForeHelp 2.0*. Help files can contain anything, it doesn't have to be program documentation.

Our demo is restricted to ten topics and is missing the spell checker

and thesaurus facilities which are provided in the full package.

Oxford Computer Consultants
• 01203 690934 • £295
• Windows 3.1

Turbo C++ 4.5 Sample Applications

Please turn to the floppy disk details on page 14 for more info

Help Browser

This useful little add-on to the standard Windows help is one you wonder how you ever lived without. The demo works with the *Program Manager* and *File Manager* help files.

Oxford Computer Consultants
• 01203-690 934 • £ 55.00
• Windows 3.1

Bubba

◆ *Bubba*: words fail us. Simply load it up and have a great laugh



Please turn to the floppy disk details on page 14 for more info

Print Artist

Design and print your own personalised signs with our great demo

version of *Print Artist*. This sneak preview is the US version of *Print Artist* – the UK version will be available shortly. Watch out for our forthcoming review with full details – we keep you posted as it all happens.

Contact and price TBA • Windows 3.1 – 4 Mb RAM

Super Memo

Learn fast and forget those days of forgetting everything with our fabulous, easy-to-use demo of *Super Memo*. This wonderful speed learning program comes with sample French, Russian, German, and Art info.

Zem Software • 0181-568 0083
• £49 • Windows 3.1

Library

PC ANSWERS
Library

Essentials for running a modern multimedia PC

Internet Assistant
for Word 6

Write your own Web pages with this handy little add-on for Word 6

McAfee VirusScan
for Windows

Worried about your PC's health. Check it hasn't been infected with a virus with McAfee VirusScan for Windows.

Boot disk builder

Say farewell to those out of memory blues with our boot disk builders.

Video for Windows
version 1.1e

This is the very latest version of Video for Windows. If you ever get a

'Windows can't display this video clip' error message, you can use this to fix the problem pronto.

Win 32

These 32-bit extensions are required by some software, notably the MPEG player below.

MPEG Player

The Motion Picture Expert Group set a standard for video playback on PCs. This Windows MPEG player enables you to play MPEG files. Liven up your PC with some animations!

Visual Basic

The Visual Basic Primer goes with our Mastering Visual Basic series – order your back issues from page 101. You can also use it to learn Visual Basic and enjoy many Code Room projects

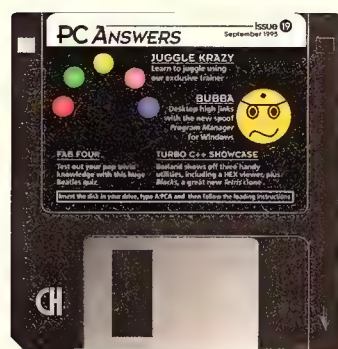
Ask the Experts

You can find all the files mentioned by our Programming and Comms experts on pages 102 to 108.

Code Room

This is where you can find the files to go with this month's Code Room project starting on page 60.

HD Disk



This month's floppy disk is packed with some of the best software around!

Juggle Crazy



Want to learn to juggle? Well, here's your chance! Juggle Crazy is

considered by juggling aficionados to be the best PC tutorial available. PC Answers talked the author of Juggle Crazy into creating a shareware version just for you.

Solipsys • 01422 843672
• £25.99 • 386

Bubba

◆ Bubba is the first ever parodyware product

You've heard of Bob? It's Microsoft's easy to use Windows Program Manager replacement. Bob will not be making a UK appearance. Not to worry though, you can now meet Bob's country cousin, Bubba. Ososoft • Free • Windows 3.1

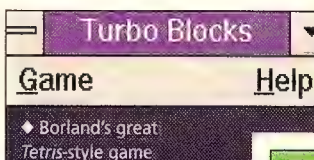
Turbo C++ 4.5
Sample Applications

Try out some sample applications created with Borland's new compiler.

Borland have just released the hobbyists version of their top-rated C++ compiler. We've got a lovely bunch of utilities and a game taken directly from the package. It includes a

Tetris-style game, a hex file viewer, a system information utility and a great little file browser. What more could you possibly ask for?

Borland • 01734 320022 • £81.08
• Windows 3.1 – 486 – 4 Mb RAM



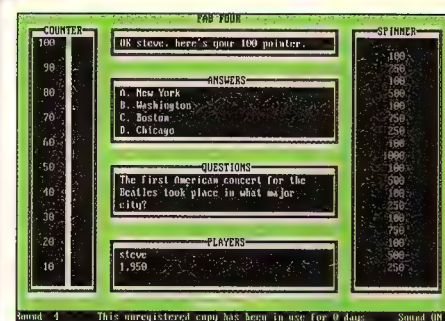
◆ Borland's great Tetris-style game



Fab Four

Test your knowledge of one of the world's best pop groups with our special, exclusive PC Answers version of Fab Four. Clicking on the Fab Four icon in the PC Answers menu installs the files to your hard drive. From DOS change to the directory you installed the files to and type FABFOUR.

SportsWare South
• 00 1 713-524-6394 • \$17.95
(approx £12) • 386



◆ Take That aren't the only all-male group to have had teenage girls swooning in the aisles – they've got better haircuts, though

Ask the Experts

You can find all the files mentioned by our Programming expert in Ask the Experts, starting on page 102.

Code Room

The files to go with this month's Code Room project starting on page 60 are to be found here.

If you have any problems, don't despair...

DOS memory problems

If you get a message of the type 'Not enough memory – program X needs 590K of conventional memory' when running a DOS program, use Memmaker to maximise the amount of free DOS memory on your PC. For more information see Memories are made of this (issue six); Control

your PC (issue seven) and Increase your control (issue eight). See page 101 for back issues. If you have DOS v5 or lower you should upgrade.

Floppy disk problems

If DOS can't read your HD disk, you can obtain a replacement by returning the damaged disk to: DisCopy Labs (PC Answers Issue

18), Units 2/3 Omega Technology Centre, Drayton Fields, Daventry NN11 5RT

CD-ROM problems

If your PC is unable to read the CD-ROM, return it to Karen Jones at Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW. If you have any

problems running software from either the CD-ROM or HD disk, ring 01225 442244 and ask for Trevor Witt – he's the man who knows 9.30 to 6.00 pm every day.

◆ Every reasonable precaution is taken during preparation and duplication of the cover mounts, but Future Publishing and its agents cannot accept liability for consequences arising from their use.



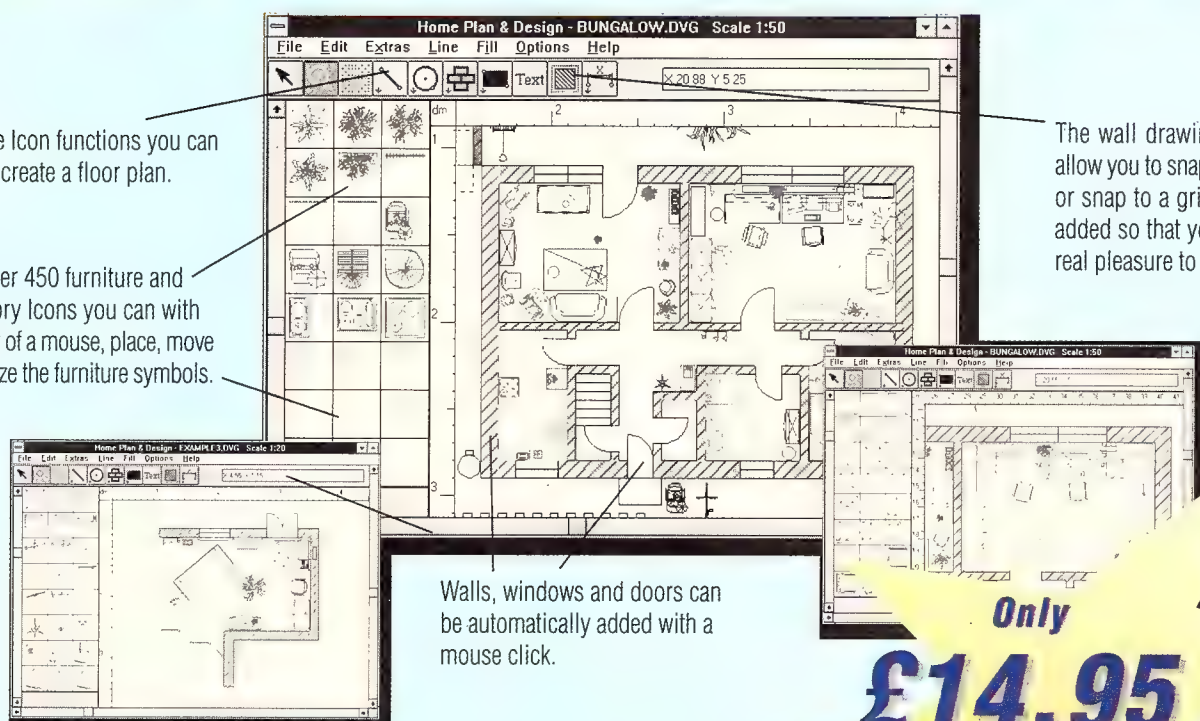
DO YOU NEED MORE SPACE?

House too small? No space for the growing family or the new furniture? Before you think of moving, why not get the best out of your existing home. With HOME PLAN & DESIGN you can create floor plans quickly and then easily place your furniture represented by symbols. Of course, with HOME PLAN & DESIGN you can also plan your furniture arrangement for that new house.

With the Icon functions you can quickly create a floor plan.

With over 450 furniture and accessory Icons you can with the click of a mouse, place, move and resize the furniture symbols.

The wall drawing functions will allow you to snap to existing walls, or snap to a grid. Colour can be added so that your final plan is a real pleasure to look at.



Walls, windows and doors can be automatically added with a mouse click.

Only
£14.95
Inc. VAT

Furniture moving with pleasure.

Moving your furniture without sweat is now possible. The existing living space can be best utilised for new items. The cut out functions of HOME PLAN & DESIGN make creating a floor plan child's play. Walls, windows and doors will automatically be added. In addition with over 450 furniture and accessory icons.

Introducing DATA BECKER's GOLDEN SERIES. The GOLDEN SERIES range of products are original, full value for money Windows applications. Each product is supplied with a hard back book. Other products in the GOLDEN SERIES include: GraphicWorks, CD Speed Tornado, Family Tree, and QuickEx. New releases are planned every month. Contact your local Dealer or DATA BECKER for details.

DATA BECKER

- Output to your printer in A4 or other selected paper size
- Over 450 furniture symbols
- Instead of moving - replan your existing home
- Automatic dimensioning
- Contents list of furniture drawn
- Easy to use drawing functions.
- Fully compatible with DATA BECKER's GraphicWorks
- New furniture icons can be created with GraphicWorks
- Also suitable for office and school floor plans
- Detailed on-line help

Unit 4, Bentley Industrial Centre, Bentley, Farnham,
Surrey, GU10 5NJ Tel: 01420 22707 Fax: 01420 22807

MICROSOFT UNDER FIRE

Microsoft is looking increasingly shaky – or, alternatively, its competitors are looking increasingly desperate. Take your choice... OK, it's desperation. With Windows 95 now firmly on schedule for an August 24 retail launch – which means that at last you can walk into Dixons and buy it – those worried by Microsoft's ever firmer grasp on the PC software and services business are casting around for any weapon to wield against the industry leader.

In the US, the Department of Justice – DOJ – recently blocked the \$2.1 billion takeover of Intuit, the company that brought you *Quicken* personal accounting software. Microsoft has, of course, simply shrugged off this minor obstacle and is now planning a major push of its own package, *Money*, instead.

Version 4.0 will be released soon after Windows 95.

More bizarrely, Microsoft is now being charged with consumer fraud by a US consumer lobby. Anthony Martin, law professor and executive director of a group called the Committee to Fight Microsoft, claims Windows 95 cannot run applications on a 4Mb PC. Said group filed its claims with 50 state attorney generals in the US – it wants all sales of Windows 95 to be banned. Anthony Martin does admit that Microsoft isn't the only

software baddy but points out that being the biggest it's the best target. Good try, lads.

The DOJ is also investigating Microsoft's latest attempt to impose a 'per-processor' licensing deal on some manufacturers bundling the *Office* software suite with their

PCs. Microsoft had to give this practice up with DOS and Windows – it will certainly have to give it up again with applications.

More seriously, Microsoft has now confirmed that it's cooperating fully with the DOJ investigation into the Microsoft Network. No one is admitting priming the pump on this one but competitors CompuServe, Prodigy and America OnLine are the only candidates.

The investigation centres on claims that Microsoft has an unfair advantage having built MSN into Windows 95. Microsoft senior vice president for law and corporate affairs, Bill Nuekom – yes, that's his real name – criticised the instigators for, '...resorting to complaining to government regulators rather than competing vigorously in the market place'.

Martin Turner, of CompuServe, feels the investigation is justified –

surprise, surprise. He says, 'We welcome competition on a level playing field but having access to the operating system is not a level playing field'. What do you think? You can e-mail us on pcanswers@futurenet.co.uk.

What will happen, then? Windows 95 will launch and sell millions. Those who can't compete will go to the wall, as happens in every business.

News



◆ The sun never sets on Microsoft's software empire, but the natives are revolting

WINDOWS 95 VERSION 2.0

No, the first one hasn't arrived yet but, hey, that's no reason not to start selling version 2. The big news is that, in Windows 95, Microsoft will include the ability to play VideoCD discs without an MPEG decoder card.

The software has already been licensed from US company Mediomatics. According to Steven Banfield, Microsoft's multimedia program manager, 'This will increase the market, making MPEG a mainstream item.'

Microsoft wants it because it means higher quality digitised video

in multimedia titles and, possibly, MPEG video on standard audio CDs. There are limitations, though. The main one being it needs a 90MHz or better PC – or the equivalent processor from a different manufacturer.

MPEG cards, though high profile, are poor sellers. Tim Miner of Sigma, maker of the RealMagic VideoCD card also believes it will grow the market, for MPEG cards, '...software decompression will not offer anywhere close to the quality of the full-motion we can provide with the Magic card.' We'll see.



◆ OK, so the film of William Gibson's *Johnny Mnemonic* isn't out on VideoCD, but it's appropriately high tech and digital

MOLECULAR COMPUTING

Leonard Adleman dreams of solving big problems with small computers – molecular sized. He's demonstrated the ability of a test tube full of DNA to solve a classical computing problem.

Working in the University of Southern

California, he solved a simple version of the travelling salesman problem – working out the shortest route between seven cities linked by 14 routes – without visiting any city twice.

The problem was coded as a sequence of molecules

on DNA strands – the very stuff of life. Sequences representing the starting conditions were created, millions of copies made and the whole lot left to stew for a week. At the end of that time, the shortest sequence – which corresponds to the

best solution – was extracted using standard lab techniques.

OK, DNA computers are slow but they can be massively parallel – able to consider every possible answer in one pass. No use for word processing but

brilliant for cracking codes. The possibilities certainly haven't escaped security types around the world. But don't expect an expansion board for the PC based on this technology... it'll be a while before it can be made to produce useful results.

New releases

Net Nanny

You're rightly worried about giving your children unrestricted access to the Net, but you still want them to be able to use it – you need *Net Nanny* from Leaf Distribution on 01256 707777. This £58 program sits in the background in either DOS or Windows and monitors all text input into the PC.

When it comes across a word or phrase it's been told to look out for, it can add it to an audit trail, refuse to pass it on or even lock up the system until you release it with the master disk. Look out for a full review next month.

Pretty as a picture

Simply Scenes, from Visual Software, is a series of editable 3D worlds designed to be used with 3D Studio and Visual Reality. There are three volumes of scenes so far, with more in production. Currently, you can work with beaches, castles, a park and various other useful locations. Each volume costs £46. For more info call 0151-933 8772.

Better Net Work

Emissary is a Web browser from the interesting sounding Wollongong that does everything else as well. It handles e-mail, newsgroups, file access, UUEncoding/decoding and file viewing, and comes with its own TCP/IP stack for Net access. It costs approx £99 and you can get more details on 01344 302242.



◆ *Emissary*: the ultimate in integrated Net utility software

BETTER MULTIMEDIA

You're currently on MPC 2 – Multimedia PC standard 2 that is – but that's now out of date. The Software Publishers Association has just published its recommendations for MPC 3. The main recommendation is support for full-motion MPEG-1 video at 30 frames per second.

Whether or not this will vitalise a moribund market remains to be seen, but it's worth noting that Microsoft is putting together an MPEG version of its best-selling *Encarta* CD-ROM title.

Scared in cyberspace

US Senator Jim Exon's amendment to the US Communications Decency Act could mean a fine of up to \$100,000 and two years in jail for publishing '...any obscene communication in any form including any comment or image.' It applies to any on-line service accessible to people under 18. It's just been accepted by 84 votes to 16 and is set to become law.

In many places in the US, an offence could amount to a four-letter word in a newsgroup posting – and there is a precedent for prosecuting people who aren't breaking the law of the location they're operating under. Last year a jury in Memphis, Tennessee convicted Robert and Carleen Thomas on charges of transmitting obscene images via computer modem from a bulletin board service which they operated in Miltipias, California. The two are currently in gaol awaiting the result of an appeal.

Exon's amendment is aimed at adult BBS operators and Internet providers, and effectively makes the standards of the most conservative town in the US a world benchmark for decency.

Anyone will be able to bring charges against any university or Internet provider, for example, carrying material they find obscene. Yet the providers, for certain, can't police material moving through and accessed

from their PCs. If the Act does become law, running an Internet provision business in the US – or even an Internet site – will rapidly become an untenable activity.

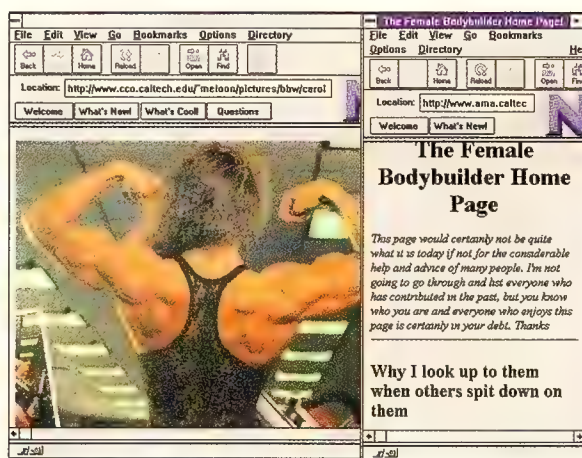
Senator Patrick Leahy attempted to replace the Act with an instruction to the Justice Department to investigate ways for dealing with sexually explicit material on the Net. 'None of us is in favour of pornography but we can accomplish the goal of keeping pornography away from children without imposing a big new layer of government censorship and without destroying the Net.' He failed.

Interestingly, *American Reporter*, an on-line newspaper, provocatively stated that if the Act does eventually become

law it will, 'publish material of the kind we ourselves detest in order to provoke a test case.'

As usual, the social contract, people's understanding and the law all lag behind technology. Killing the Net is not a sensible option, so it probably won't happen. President Clinton can still veto the Act before it becomes law. He can't, though, veto the debate.

It's possible to protect children without destroying an emergent technology. It's primarily a parent problem – you can, after all, buy pornographic videos, but that's not seen as a reason to attack the sales of video recorders. The Exon bill isn't the answer – see the *Net Nanny* story top left for a better approach.



◆ Is one group of Net users entitled to dictate standards for all Net users, or should it continue to cater for all interests?

THE END FOR THE 486

Rumours that Intel is planning to stop production of 486 chips for the PC market are premature – according to Intel's Doug Walker, 'They will be built into portable PCs for the foreseeable future'. He does concede that 'Desktop PCs are moving steadily toward the Pentium'. It may not matter what Intel thinks, however, as

some PC manufacturers look set to stop using them early next year. You think this unlikely? Well, it isn't. Hewlett Packard has already said that it expects 486 processors to last no longer than the first quarter of 1996.

There is a precedent for dramatic change. When Elonex first dropped 386 PCs from its range the move was met with gasps of amazement – a few months later the stampede was on and the 386 got trampled underfoot.

Of course, those chip companies that can't jump on the Pentium bandwagon are talking up the future of the 486. AMD is showing a 120MHz clock tripled 486 which it claims outperforms the 75MHz Pentium. It's also planning a 133MHz version of the 486. AMD's Richard Baker says, 'By making a faster, cheaper processor we are extending its life'. The problem is persuading PC manufacturers to invest in 40MHz motherboards to support it. As usual, you can spot a technology on the way out by the new heights of excellence it achieves. Look at how good the 486 can be... and kiss it goodbye.

◆ The 486 is now available in 120MHz versions from AMD, but you may never see it in a mainstream PC



LAST GASP FOR LOTUS?

When two of the biggest players in the PC world join forces it ought to signal exciting times for PC users. The once mighty IBM is paying an extraordinary \$3.52 billion for Lotus – twice its market value and the biggest deal of its kind ever. Lotus CEO, Jim Manzi, says, 'It's an extraordinary compliment'.

It may not be. IBM has a poor track record running bought-in companies with a string of failures to show for its shareholders' money. Unfortunately, IBM is also incapable of creating its own saleable PC applications. It's tried and died several times. The last attempt was in 1988, when it set up the Applications Solutions Division – which failed to live up to its name.

It's an attitude problem. IBM's Dave Pullin, who's currently responsible for software development at IBM, told us last summer that 'IBM created the infrastructure with OS/2 and it's up to third party developers to create the applications'. Third parties are doing no such thing.

Buying Lotus looks as bad a bet anyway. The PC software market is dominated by Microsoft – which is why once mighty WordPerfect is a division of Novell and Borland is shrinking faster than an Olympic-standard weightwatching squad.

Lotus' flagship PC software, *SmartSuite*, is trailing way behind *MS Office* in an essentially stagnant corporate market, while its share of the growing consumer software market is comparable to Britain's share of the space program.

SmartSuite for OS/2 will probably end up bundled with OS/2 to make it more attractive even as IBM works hard to sell *SmartSuite for Windows* against *Microsoft Office* – is this a split personality, or what?

So, for \$3.52 billion the confused, ultra-conservative 70-year-old IBM gets a flagging 13-year-old company run by a chairman, Jim Manzi, who's been known to wear dresses to parties. Good company culture fit, that. Microsoft

“Microsoft is reported to be concerned about IBM's acquisition of Lotus”



◆ Skilled IBM and Lotus managers labour to erect a single desktop from two parted homes

is reported to be concerned about IBM's acquisition of Lotus. It needn't be. The outlook for

overpriced takeovers is poor. Culture clashes ensure more navel-gazing than action. The only difference that it's likely to make to most PC users is to make Microsoft an even more obvious choice for your PC software.

Intel natives

Intel believes that the best thing to do with all that lovely Pentium power is use it up. It's preferred method is NSP – Native

Signal Processing. The idea is to process digital movies, sound, video conferencing and so on without adding support hardware. Yep, that will soak it up every time.

Microsoft, which is incorporating similar features into Windows 95, doesn't seem interested in

Intel's answer, however, because it failed to give NSP even a passing mention in any of the Windows 95 workshops it held in Seattle recently for developers.

Others also appear less than keen. 486 chip manufacturer AMD has even gone as far as accusing

Intel of using NSP to try and force the market to adopt the Pentium. Intel really doesn't need to – the market will go that way anyway. In the meantime, though, NSP looks irrelevant to Microsoft, which, of course, means it's irrelevant to us all.

OS/2 PROGNOSIS POOR

If IBM public relations director Jo Anne Sager hadn't accused market analysts Dataquest – along with all other market research companies – of being in league with Microsoft, few of us would be aware of Dataquest's prediction that OS/2 will have less than one per cent of the PC desktop

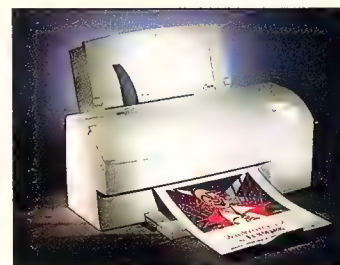
operating system market by the year 2000.

What she actually said, as reported in the corporate news paper *PC Week*, was, 'These analysts have made these predictions because they have a vested interest in Microsoft's success with Windows 95. They are misleading you.' Strong

stuff. OK, market analysis is hardly a precise science, but you don't exactly need a crystal ball to believe that one IBM has done everything except give OS/2 away with a five pound note strapped to it, and still it flounders. No one at IBM cared to offer any alternative figures.

Windows 95 printers

Lexmarks colour inkjet, the WinWriter 150c, is aimed at the private PC owner. It costs £349 and is guaranteed to work with Windows 95. It has separate black and colour cartridges for economic operation and prints at 600 x 300dpi. Lexmark estimates 200 colour pages per cartridge at 15 per cent coverage and provides a three year guarantee. More details on 01628 481893 or from PC retail outlets. Reviewed next month.



◆ The WinWriter 150c: a state-of-the-art low-cost inkjet printer for Windows

Sex for fun

The Pleasures of Sex is a £49.99 CD-ROM with an hour of full-motion video. It covers the physical and emotional side of sexual relationships. It also has still images, more than 250,000 words of text including frequently asked questions and AIDS information. Fun and facts from Telstar on 01932 222232.



◆ Despite complaints that there's too much sex on the Net/TV/street, consumer demand remains high

EZ 135 Drive

Snappy name, eh? Syquest is a big name in removable storage – at high prices – but its new drive sells for £176 with each 135Mb cartridge costing about £15. The drive has 13.5ms access time with a data transfer rate of 2.4Mb per second. Even better, we'll try one out next month. More info on 0800 526559.



◆ Syquest believes its EZ-135 drive will kill the Zip drive. Features include hard drive performance and low price

Chip speeds reach new heights

Just before Christmas last year all the announcements were about 90MHz Pentium PCs, then came the 100MHz Pentium systems. Just a month or so ago 120MHz Pentium PC press releases littered the desks here at *PC Answers*.

This month the litter announces the first 133MHz PCs. First off the

starting blocks are companies Elonex, Viglen, IBM, Compaq, Dell and DEC. Out of general interest, this is the ninth version of the chip launched in March '93 at 60MHz – a chip that has already

acquired past life properties as far as PC users are concerned.

Indeed, manufacturers are now anticipating the next wave of upgrades. For example, motherboards in Elonex 133MHz Pentium PCs support voltage control for 3.3 volt versions of even faster processor chips scheduled to arrive before Christmas. We may even see a 160MHz Pentium processor this

year – effectively a clock tripled Pentium chip.

With such a rapidly evolving market, it's easy to become confused about what to buy and when to buy it. Bill Gates, Microsoft supremo, says you should buy the best PC you can afford when you need it, on the grounds that if you need it you need it now, not

later. Good advice from the man who always buys what he needs when he needs it – Department of Justice permitting.

On the other hand, the price of a current, fully configured PC remains at about £2,500 – and has done since

around 1984. But today's £2,500 PC would blow the doors off a 1987 PC – or even last year's £2,500 PC.

What this means is that, when the 133MHz PCs become the standard, the current 120MHz and 100MHz PCs will drop below that price point, while still performing as well as they do now. Of course, they won't seem nearly as desirable then...

“Bill Gates says you should buy the best PC you can afford when you need it”

Just how high can processor speeds go? According to Intel they can go to 160MHz in the next few months

Actors turn on

Prepare to be inundated with virtual actors. Superscape has dropped the price of

employing virtual actors from around £200,000 to under £10,000 with its ready-made PC-based *Impersonators*. These are available off the

shelf or, if you want, you can have one tailor-made to your own specifications.

Current characters in the range include Ronnie Rigsby, Jack Box and Dilbert. These are operated in realtime by real people, using head-mounted televector sensors like the familiar Ratz on children's TV.

The target market is presentations, where they can interact with the audience, but it seems likely that the low-price point and easy availability of custom characters will make them most attractive to TV programme producers.

◆ Budget, ready-to-wear vactors from Superscape mean you'll be dealing with a lot more of them in future



RANDOM NUMBERS

In six months **50,000 organisations** and **400,000 end users** had clocked up over **75 million hours** of testing on Windows 95 ● **Bubonic plague** killed **75 million** people in the fourteenth century ● The oldest man ever was Japanese and died in 1986 aged **120 years 237 days** ● In 1808 a girl of **seven** was hanged at Kings Lynn ● Tokyo is the largest city with **11.9 million inhabitants** ● **37 per cent** of married Korean women and **11 per cent** of Korean men have been sterilised ● Only **12 men** have ever walked on the moon ● Only **one in five** of all satellites orbiting the Earth is still working ● There are over **200 newspapers** on the Net ● At Cruddas Park in Newcastle-upon-Tyne, only **26 per cent** of over 3,000 households have a telephone ● *PC Answers* office hit **39 degrees centigrade** while writing this ● Greenland has ice **three kilometres thick** – let's get some in.

COMPETITION WINNERS

Did you win the fantastic competitions in the July issue of *PC Answers*? We gave away three copies of the fantastic *Adobe Premiere*, along with five of the finest graphics cards available.

In the *Adobe Premiere* competition we asked:

- 1) What does EDL stand for? Edit Decision Lists
- 2) What is the maximum number of video tracks? 99
- 3) How many transitions does *Premiere* have? Over 70

The three lucky winners are Steve Walker from Kent, Mark Leonard of Hertford and Jonathon Johnson of Sheffield. Well done to you all!

For the nine FX Motion 771 graphics cards we asked you:

- 1) In which country did Number Nine Visual Technologies originate? USA
- 2) What footsteps does the 771 follow in? 9FX Vision 330+9FX Media
- 3) Is HawkEye a Windows driver or a sharp-eyed car driver? Windows Driver

The five lucky winners drawn out of our postbag are: Geoff Walton of Willenhall, Shameel Rahman from Reading, D Flint of Buxton, Mrs C Moore of Sheffield and Karl Robson of Southampton. Congratulations to all the winners, and if you didn't win, remember this: if you're not in it, you're not going to win it. Turn to pages 39 and 113 for this month's fabulous competitions.

Games news

Games move fast – but games houses move even faster. Steve Bough brings you the hottest rumours from the darkest coding rooms

Hot news from Bullfrog, which informed *PC Answers* that work is already in progress on a follow-up to the fantastic *Magic Carpet 2*. The new and improved version promises to be



bigger, bolder and even more addictive. You now have to complete night time and underground missions using eight, brand new spells. 13 totally new creatures will stand in your way, and with a combination of whirlwinds, manna, flowers and other explosives it'll be even better than the real thing.

MicroProse, the West country software giant, is as busy as ever. It's not content with giving us the best *Star Trek* game ever, oh no. It plans to follow it with two stonking newbies. The first one, with the no-mess name *This Means War*, is a Windows game which promises to be a massive killfest, all happening in the post-apocalyptic era, while *Formula One GP2* is

the second in the series of the superb Geoff Crammond racing simulations. Yet another chance to

◆ Put some caption text in here please Put some caption text in here please Put some caption text in here please

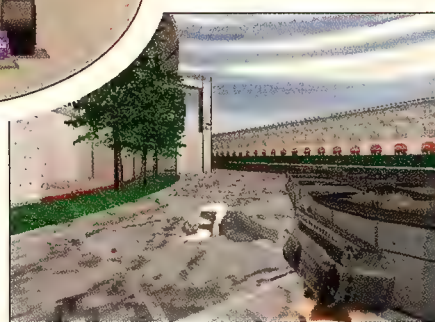


◆ Take control of a Formula One car from the safety of your chair. No chance of a Joss Verstappen here

pretend you're Damon Hill.

William Shatner, after ditching T J Hooker, has turned his limitless talents to writing. His book has been turned into a brand new game from US Gold. *Tek Wars* is set in the future and uses the same engine as the *Duke Nukem* series. Druglords have hooked the world on their new substance and, surprisingly, you must stop them. In true Shatner style, this means a big fight and naff stunts on a mountain. *The Riddle of Master Lou* is an interactive adventure in which you take on the role of freak show host Robert Ripley. Get ready for some two-headed tomfoolery.

Finally, Virgin maintains its constant flow of games. Yes, those



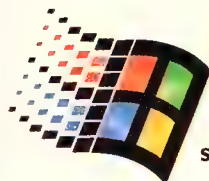
◆ *Tek Wars*: Shoot that sucker down. This William Shatner-inspired game follows a bunch of corset-wearing wig stealers

rumours are true, *Blade Runner* is set to hit the PC, but, sadly, this isn't expected to happen until '96. Meanwhile, *Screamer* looks set to burst on to the scene come September. This one's a *Ridge Racer* clone – and it's mega-fast. You can use up to eight different cars and it can all be networked – get your mates round for a session.

You can count on us to keep you posted on news of these other hot releases: *Descent 2*, *Actua Soccer* and The Kev-tastic *Waterworld*. I can't wait.

Next month in PC ANSWERS

The best magazine for the home PC user with the most up to date features, reviews and news. Don't miss the next exciting issue, have your copy reserved – now



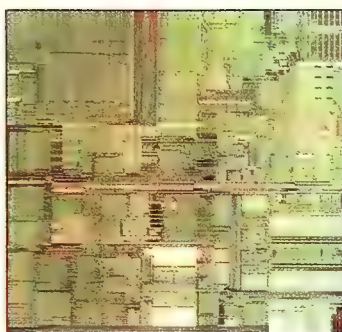
Windows 95 secrets

The unmissable guide to the hidden secrets of Windows 95

- Get the most out of the new Windows 95 interface
- Making Exchange work for you
- Trouble-shooting
- What Microsoft didn't tell you
- Windows 95 and the Internet
- Microsoft Network
- Plus: secrets that we don't even know ourselves – yet

You can afford a Pentium 90 PC

PC Answers puts budget Pentium 90 systems under the spotlight, shows you how they perform and explains how you can afford to take that step up to the leading edge of today's computing.



Klik & Create – world exclusive

You enjoyed creating games with *Klik & Play* – its big brother, *Klik & Create* is even better.

Don't miss this usable demo of the most exciting Windows games builder ever – and – step-by-step instructions to get you started



PLUS

- News special: Is the Internet getting too big for its boots?
- The best new software and hardware reviewed
- The best games rated
- The software psychiatrist speaks in our Code Room project
- On-line tutorial – File Transfer Protocol for free software

TOP SECRET

On sale Thursday August 24

MULTIMEDIA WITH A BONUS

NEW

ANSWERPHONE FOR PC

Add an answerphone and phone book organiser to your computer system

Features include:

- Answerphone with 9 voice mail boxes
- Music on hold from multiple sources
- Phonebook organiser with auto dialler
- Microphone for speakerphone use



BONUS
2
POINTS

£49

FAX MODEMS

GET STARTED ON THE INTERNET



£79



Every fax modem includes

- ▼ CompuServe start-up kit supplied with one month free membership
- ▼ Fax Works Easy to use full version modem and fax software not just any 'lite' version
- ▼ DisKey Data & protection and file compression for home, office and transmitting on the Internet. Easy to use just click and play

▼ **BABT approved modems**

INTERNAL FAX MODEM 14,400 BPS
Complete with CompuServe DisKey & FaxWorks

£59

EXTERNAL FAX MODEM 14,400 BPS
Complete with CompuServe DisKey & FaxWorks

£79

INTERNAL FAX MODEM 28,800 BPS
Complete with CompuServe DisKey & FaxWorks

£129

EXTERNAL FAX MODEM 28,800 BPS
Complete with CompuServe DisKey & FaxWorks

£149



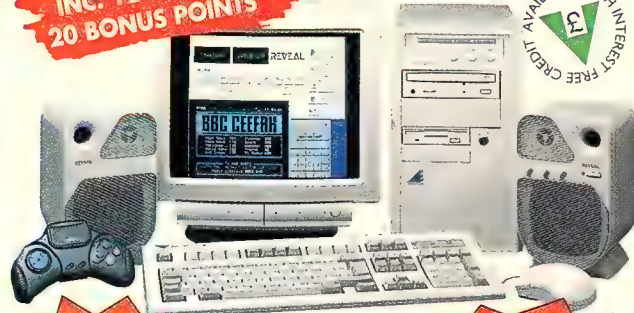
All Modems



PC-TV-HIFI-FAX-MODEM

INC. 12 CD'S OR
20 BONUS POINTS

AVAILABLE WITH INTEREST FREE CREDIT



£995*

£1395*

DX2-66

540 Mb IDE
4 Mb RAM 128k cache
Yes (TeleText Option)
Dual Speed Multi Session
16 bit stereo
14" SVGA .28 NI / 1Mb
80 Watts active
14.4 bps + CompuServe®
Multidirectional Gamepad

Processor

Hard Disk

Memory & Cache

TV Card

CD ROM

Soundcard

Monitor/Graphics Card

Speakers

Fax Modem

Game Controller

Pentium 75MHz

540 Mb IDE

8 Mb RAM 256k cache

Yes (TeleText Option)

Quad Speed Multi Session

16 bit stereo

14" SVGA .28 NI / 1Mb PCI

80 Watts active

14.4 bps + CompuServe®

Multidirectional Gamepad

All PC's are supplied with 2 x serial port, 1 x parallel port, integrated fast I/O and fast IDE, 1.44Mb 3.5" floppy disk drive, serial mouse with drivers, 102 enhanced keyboard, Windows™ for Workgroups 3.11 and Microsoft DOS® 6.22 installed.

MULTIMEDIA

SPECIAL OFFER



Quad speed CD ROM drive,
16 bit stereo soundcard
& 8 watt speakers, headset
with microphone

£179

15 software titles
including CD's

Return to Zork

Wing Commander II,

Grolier Encyclopedia,



QUAD SPEED CD ROM

Quad speed NEC/MITSUMI CD ROM drive

£99

BONUS
2
POINTS

High Speed IDE ATAPI adaptor

£10

DUAL SPEED CD ROM DRIVE

Dual speed, multi session.

£79

BONUS
2
POINTS

SOUNDCARDS

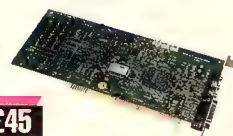
SOUND FX PRO 16 stereo soundcard
IDE, Quad speed. Panasonic, Sony & Mitsumi
interface. With 10 software titles including
Audiostation

£45

16 BIT WAVETABLE synthesis stereo soundcard IDE,
Quad speed. Panasonic, Sony & Mitsumi interface. With 10
software titles including Audiostation

BONUS
2
POINTS

£75



SPEAKERS

£25

20 watt active
stereo speakers
Fully shielded,
volume, bass &
treble controls

£39

80 watt active
stereo speakers
Fully shielded,
volume, bass &
treble controls



ACCESSORIES

JOYSTICKS

GAMEPAD

ERGONOMIC MOUSE



£14.95

available in black
or white



£9.95

available in black
or white



£14.95

WIRELESS

£19.95

with cable or
wireless



CALL NOW 0181 845 8383

WESTERN SYSTEMS (EUROPE) LIMITED

OPENING HOURS:

Mon - Fri: 9.00 - 6.30

Sat: 10.00 - 2.00

Western House, Braintree Road, Ruislip, Middlesex, HA4 0EJ. Tel: 0181 842 0071 Fax: 0181 841 3891

MULTIMEDIA WITH A BONUS

TUNE TO YOUR FAVOURITE STATION

TV CARD

- Watch your favourite TV programmes
- Capture and use images in documents
- Works with camcorders and VCR's too

£139

BONUS
2
POINTS



Teletext option +£49

RADIO CARD

- Tune your PC to your favourite radio station
- All necessary cables & adaptor plugs
- User friendly software and manuals



£25

HARD DRIVES

- Step by Step installation video included



- 540Mb Seagate drive
- 1Gb Seagate drive

£139

£225

TAPE DRIVES

BETTER SAFE THAN SORRY

- 1.3Gb Capacity
- Easy to follow installation
- Includes software & mounting brackets



£149

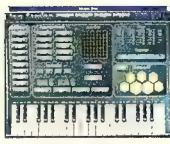
MusicSTAR

4 GREAT CD TITLES

PRIVATE LESSONS



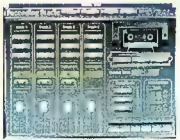
JAM SESSION



MUSIC SCHOOL



RECORDING STUDIO



Buy the Musicstar software package comprising of these four highly recommended music software titles and get a Midi Keyboard free. The Musicstar software is also fully compatible with other Midi keyboards

BONUS
4
POINTS

ONLY

£69

FREE! MIDI KEYBOARD



MPEG

REALMAGIC™

BONUS
4
POINTS

ONLY

£179

Experience life like games and view your favourite films, music stars.

RED HOT OFFER

The Perfect Present 12 CD Titles

Including: Super VGA Harrier, Links Golf, National Parks, It's a Bird's Life, Terminator 2, Spectre VR, That's a Geek to Me, USA Today, Strategy Football, Tutor Collection, Family Doctor

ONLY

£29



EXTRA POINTS

You may like to purchase extra software points to enable you to receive more software. If you have made purchases of hardware in excess of £49 then you will be entitled to purchase extra value software points

	Bonus Points	Extra Value Points
8pts	£49	£25
12pts	£89	£30
16pts	£125	£35

* For customers with purchases in excess of £49

NEW

3D MAX

EXPERIENCE VIRTUAL REALITY ON YOUR PC



Includes:

- 3D Viewstar glasses
- 3D Max interface card

With 2 software titles

- 3D Time
- 3D Clay

ONLY

£99

THE SOFTWARE BONUS

BONUS POINTS create your own software bundle

Cash in your bonus points and create your own software bundle. It's dead simple. The Bonus points are shown next to each item you purchase. The value points of each software title is indicated below. Just add-up and convert Bonus Points to software titles

8 POINT TITLES • Interplay 10 titles • 7th Guest • Undersea/Space/Speed • Iron Helix • Cyberia • Return to Zork • 3D Dinosaur/Kids Zoo • Guinness book of Records • Sim City 2000 • Theme Park • Grolier '95



4 POINT TITLES • Wing Commander II • Dragon Lore • Strike Commander • The Horde •

Kings Quest • Mega Race • Seawolf • World Cup Golf • Star Wars Chess • Macromedia Action/Clipmedia II • 20th Century Video Almanac • Oceans Below •



2 POINT TITLES • Super VGA Harrier • It's a Bird's Life • Links Golf • USA Today • National Parks •

The Family Doctor • T2 Screen Saver • Spectre VR • That's a Geek to Me • National Parks • Strategy Football • Chessmaster • Tutor Value Collection •



CALL NOW 0181 845 8383

WESTERN SYSTEMS (EUROPE) LIMITED

OPENING HOURS:

Mon - Fri: 9.00 - 6.30

Sat: 10.00 - 2.00

All prices are exclusive of VAT. Inland delivery £15 per systems and £8 on other items. All sales are subject to Western Systems (Europe) Limited Terms and Conditions, available on application. The Intel Inside Logo is a trademark of the Intel Corporation. All Trade marks recognised. Western Systems reserve the right to substitute CD Titles.

Digital cash: the



new

Cyberspace is a cash-free zone, but not for long – digital cash is the next big thing on the Net.

Steve patient reports

money

You can't buy happiness, but, as the old joke goes, you can rent it by the hour. Before you can feel life's really worth living, though, you need money – and it has to be in the right format.

Perhaps you think cash is cash and the format doesn't matter, but it does. You can have £40,000 in used notes under the mattress – hasn't everyone? – but you can't buy K-Tel's *The Clash's Greatest Hits Collection*. For that you need a charge card and a telephone. Money is amorphous, it takes different forms. Right now it's about to take on an entirely new one, courtesy of the Internet... enter digital cash.

Digital cash is to the stuff in your pocket as e-mail is to words on paper. It's virtual money designed to exist entirely in the digital world, never surfacing, visible only by its effects. Being an entirely electronic entity, it will be fast, mobile and cheap.

As Nicholas Negreponte of Xerox PARC labs points out, converting information from bits into atoms costs money and adds sloth. A fax can cross the Atlantic digitally faster than it can cross an office as paper. Digital cash will flow through the Net as freely as electrons.

Donald Gleason, of Electronic Payment Services, doesn't like physical money, but, for commercial reasons, '[It costs] approximately \$60 billion a year to move the stuff... paper money will probably never go away, but it will increasingly be replaced with an electronic equivalent'. In the UK alone it costs £2.5 billion a year to handle old-fashioned physical money.

Before you can replace it, though, you need to think about what money is and how it's

used. Any alternative to existing forms of money has to be just as simple to use, cheaper and more flexible, or offer some other compelling advantages. If not, people won't use it.

First off, what digital cash isn't: it isn't a kind of credit card or a method of electronic banking. The purest form of digital cash has the same features as physical cash. You can use it to buy and sell anonymously and you can use it peer to peer without involving a third party.

The strongest advocate of anonymous digital cash is David Chaum, founder of DigiCash bv, based in Holland. DigiCash has designed and implemented a complete digital cash system based on public key encryption – see the boxout Cash and Encryption on page 22. A pilot scheme is currently running on the Internet, you can join it on-line at <http://www.digicash.com>.

Virtual piggy bank

In David Chaum's scheme you buy digital cash from an on-line bank and download it into a virtual wallet on your PC. The virtual wallet tracks it as it goes in and out. Once you've got it, you can buy things on-line. You ask for the goods, and software at the other end asks for money. Software speaks on software and the provider's account gains some digital cash and yours loses it. There are no central records unless you choose to keep them. At the end of the day, the provider can, for greater security, deposit his takings in an on-line bank.

You can even use digital cash in the real world. DigiCash has recently announced a cheap smartcard technology which enables you to download digital cash into a card which can be read exactly like a Switch card in high street



◆ Digital cash Mondex-style. The card acts as an electronic wallet, which can be used for high street, Internet or telephone transactions

Try digital cash for yourself

Digital cash operates as a debit scheme. First you exchange some of your old-fashioned cash for digital cash. It's like ordinary physical money, except you can send it down wires at the speed of light.

Each unit is unique, a one-off like a coin or note, that can be stashed, spent or given to a sibling as a bribe. There are a few pilot operations on the Net, but the best has to be the one from DigiCash.

DigiCash has created a pool of one million CyberBucks which have no agreed value. Apply to DigiCash to join the pilot scheme and you're issued with the necessary software and 100 CyberBucks.

Use your CyberBucks to shop on the Net or open up a store. It's fun, and you get to try out the money of the future. To apply to join the trial direct your Web browser to <http://www.digicash.com/>.



◆ Money, money, money. Digital cash: your passport to secure on-line spending binges

Cash and Encryption

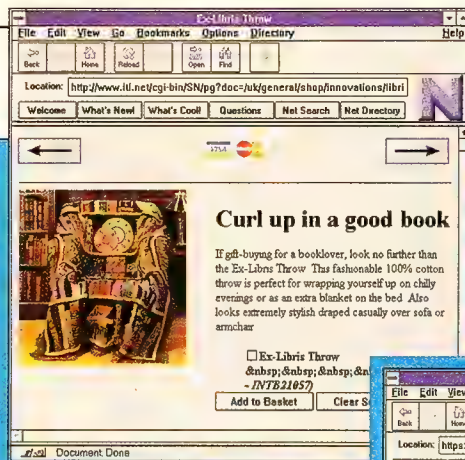
The world's favourite Net browser, Netscape, has a little key at the bottom left. Normally it's broken. However, you log on to a site with a Netscape server. It will be whole again. At this point, you can send a credit card number using Netscape, which will encrypt it for you so that no one can steal the number en route. An oddly paranoid precaution when you consider how many people quote credit card numbers down the telephone on open lines.

Netscape uses an encryption scheme called DES (Digital cash relies on a different technique called public key encryption. This involves

generating a random private key and a public key you give away to everyone who wants it. So as it would be, your public key can be used to encrypt data in a form that only you, with your private key, can decrypt.

Public keys can also be used to confirm that a message is genuine. Hence what is called PGP (Pretty Good Privacy), for example, are akin to a document that's always encrypted but whose content changes to reflect its current owner.

On the CD-ROM you'll find PGP - Pretty Good Privacy - the net encryp-



◆ The Barclaysquare shopping mall - <http://www.il.net/barclaysquare/> - supports Netscape's credit card detail encryption scheme - note the key on the payment form

◆ stores, garages, supermarkets or whatever - see News, starting on page 15.

Unlike Switch cards, smartcards contain actual digital money you can add to and subtract from - with suitable kit you can even transfer digital cash from one smartcard to another. True, you can be mugged, but there's no benefit to the mugger - only you can spend it. Importantly, there are effectively no transaction charges - as with real money. Spending and collecting large numbers of tiny sums is practical and attractive to on-line businesses.

Of course, you can already buy things over the Internet using traditional credit or charge card schemes, but these are undeniably slow and expensive. For example, Visa takes two to three per cent of the total bill plus around 25 pence per transaction - depending on what you manage to negotiate.

David Barrett, of service provider Pipex, points out that you can only implement a working technology. 'We're already providing an outlet for business on the Net using the Netscape Merchant System, which provides secure encrypted business communications, but, yes, it's for higher value credit card sales. We're talking to all the major digital cash companies, though, and the day is coming when you'll be able to buy digital cash - maybe from us - to support high volume, low value transactions.'

Currently, there is hundreds of gigabytes of data on the Net. Little of it is useful, though - useful information costs money to generate and it can be sold. Giving it away is bad business.

With digital cash you can access a Web for a nominal charge. Let's say two pence. Such

business could take many forms, for example, an on-line equivalent of Teletext. It would be fast, more detailed and have quality graphics.

Similarly, you could buy profiled news on-line, selected from a variety of feeds and matching your interests. A personalised newspaper would also be a great venue for advertisers. Advertisers would pay for each ad insertion and could audit subject profiles to ensure the ads were targeted at those likely to be interested - you'd want your junk mail.

However, despite the advantages of peer to peer digital cash, the whole concept of anonymous business on the Net worries some people.

Police and security forces think it's a boon for criminals, but the biggest questions concern its security.

Because it's anonymous, anyone who discovers how to create new digital cash will be a multi-millionaire. Many will try, though David Chaum maintains that his system is completely secure.

Winning small, though, is big business. The total

world market for small transactions - buying a Mars bar and a pint of milk - is worth more than \$2 trillion a year world wide. Even a tiny percentage of that is big money, which is why many financial companies are jumping in.

These include Visa and MasterCard, who already have over 500 million users. They plan to add a digital purse to their cards for small transactions and charge two or three pence per transaction. Mondex is currently testing its digital cash scheme in Swindon, while on the Net you can try CyberCash's debit cards.

Mondex's David Morton believes his company's scheme is a winner, 'Our smartcards

"Anyone learns how to create new digital cash will become an instant multi-millionaire"

hold real digital cash, work peer to peer and can be used anywhere real cash can be used. The cost of a purchase is vanishingly small'.

Mondex has drawbacks for Net users. Its cash only exists in a smartcard, it's in a national currency and you need a reader attached to your PC - on the other hand, it's more acceptable to national governments. David Morton again: 'Each smartcard has five pockets for different currencies, but we expect dollars to become the universal Net currency.'

Mondex and Digicash are true digital cash, the others aren't. Most are based on existing credit card schemes and provide audit trails: no instant millionaires unless it's an inside job.

The downside is that if you use one of these schemes instead of cash, you automatically generate a database detailing everything you buy, where you bought it and when. Useful information for marketing, for the tax man, for the police - for big brothers everywhere. But hey, but you've got nothing to hide... have you?

There is no good reason why digital cash requires a government's mandate. If a company you trust issues digital cash and it's accepted in exchange for services or goods, it's money. There will be many kinds of digital cash - and as many problems with tax, VAT and so on.

Kawika Daguio, a US Bankers Association lobbyist, says, 'We may in a situation analogous to the 1860s', referring to the days before the US Federal Reserve Bank, when commercial banks issued money - often heavily discounted by other commercial banks.

In Japan, pre-paid company debit cards - phone cards are a UK example - are issued for everything from vending machines to car parks. So much money circulates like this, they are seen as a threat to Japan's financial systems. If digital cash is seen as a threat, governments and banks may be reluctant to recognise it.

Considering its benefits, though, digital cash will happen eventually and it will be ubiquitous. Pick it up anywhere a phone call can reach and spend it anywhere the phone reaches. You're living in the global village and digital cash is its native currency. **PC ANSWERS**

Microsoft and digital cash

The Microsoft Network (MSN) will use Windows 95 software and Visualnet encryption technology.

Nathan Myhrvold, head of advanced technology at Microsoft, explains, 'Currently, we can't protect our privacy and information, or prove who we are. [This] technology solves these problems.'

Microsoft wants MSN to be a venue for commerce - everything from goods to services. It

needs a payment scheme - the route it's taken with Visa works with existing credit cards, but has high transaction costs compared with true digital cash.

Whether the market's there for high-cost on-line transactions on digital cash, one thing is certain: Microsoft will always support a means of making money. As US writer Steven Levy asked, 'Will we see dollar bills replaced by bit dollars?'

It's FREE!

Serif Monster Collection

OR

CD-ROM

3.5" Disk*

1000

Colour Clipart Images!

and

100

TrueType Fonts!



Dear Windows User,

If you're looking for a massive library of fonts and clipart but don't want to pay a fortune, you need the Monster Collection from Serif, developer of the Award-Winning DTP, PagePlus. The Monster Collection gives you over 1000 stunning colour clipart images, 100 designer-quality TrueType fonts and, best of all, the first 150,000 copies are FREE!

The Monster Collection is everything you need to start your own graphic resource library. Use the clipart to add impact to all kinds of DTP or Word Processed documents... and use the fonts to give all your publications real designer, typeset quality that's certain to make them stand out from the crowd.

Don't think that because it's free it's low-quality shareware fonts and art. All the fonts are professional, foundry quality and

cover a vast range of styles ranging from elegant and formal to wild and wacky. The clipart is supplied as colour Windows Metafiles (.WMF) so it's scalable to any size with perfect quality and definitely no ugly "jaggies".

The Serif Monster Collection is just a taste of the great publishing and graphics software range available from Serif. If you want the ULTIMATE Fonts and Clipart collection, along with a Suite of powerful DTP and Graphics applications, check out the Serif Publishing Suite CD-ROM and Mega ArtPack bundle. This includes PagePlus 3.0, 7000 Clipart images, 350 TrueType fonts, four additional DTP and graphics applications and more... What's the catch? There is no catch! Call now and make sure YOU get one of the first 150,000 FREE Serif Monster Collections.

For even better results, use the Monster Collection with:

Serif PagePlus 3.0 - £99.95
Award-Winning, easy & powerful DTP

Serif DrawPlus 2.0 - £99.95
Easy drawing, graphics & illustration

Publishing Suite CD-ROM - £199
The Complete DTP & Graphics Solution

Mega ArtPack CD-ROM - £59.95
7000 Colour Clipart images on CD-ROM

Please add VAT and Shipping & Handling.

CALL NOW FOR YOUR SERIF MONSTER COLLECTION, FREE: Quote Code - MCD/PCA/09

0800 924925



*The disk collection comes on FIVE 1.44Mb disks and due to space limitations is restricted to 65 fonts and 500 clipart images.
**Don't risk spending £££s on expensive software - there's no charge for the Serif Monster Collection, just pay £6.00 shipping, handling and admin. Please have your credit card ready: Visa, MasterCard, Amex or Switch. Serif, PagePlus and DrawPlus are trademarks of Serif, Inc. All other trademarks acknowledged. Collect Free, from Serif in Nottingham - call for details.

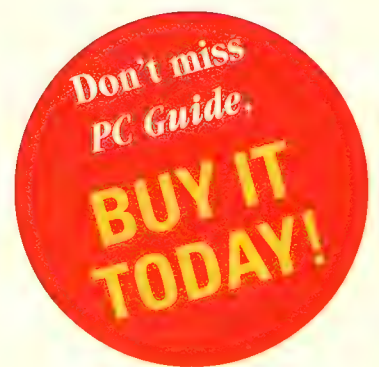
To get to grips with

...read through all these weighty tomes



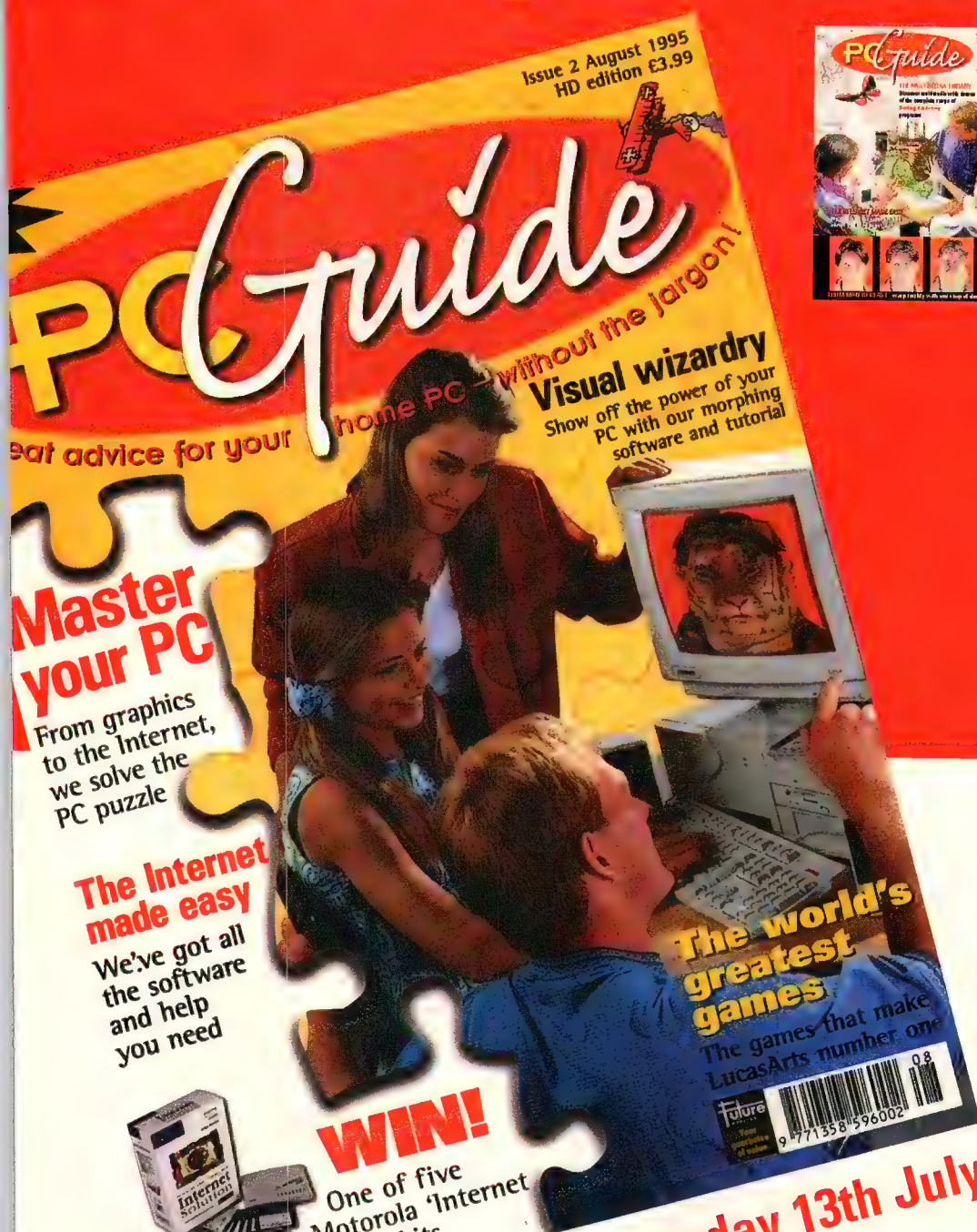
...and you'd become a complete

computer bore...



...or you could

the PC you could...



PC Guide
CD-ROM edition
\$4.99, and dual
HD floppy disk
edition £3.99

You don't have to be a computer boffin to get the most out of your home PC. Not any more. *PC Guide* is the first PC magazine on the news-stands which treats you like a human being. We don't load our pages with meaningless jargon. We don't overwhelm you with technical facts. Instead, we offer straight-talking advice on using your home PC, explaining how to get to grips with the machine and exactly how you and your family can exploit it to the full. At last there's somewhere to turn when you want advice that makes sense. *PC Guide* – we're here to make using your PC easier.

just read



...and people will still want to talk to you at parties

MIGHTY MICRO

COMPUTER SPECIALISTS

268 WILMSLOW ROAD, SHERWOOD CENTRE,
FALLOWFIELD, MANCHESTER, M14 6JR
TEL: 0161 224-8117 OR FAX: 0161 257-2803
ALSO AT
106 CHESTERGATE, MACCLESFIELD,
CHESHIRE, SK11 6DU
TEL: 01625 423170 OR FAX: 01625 618802

SIMMS

1Mb Simms (30 Pin)	£ 27.00
2Mb Simms (72 Pin)	£ 89.00
4Mb Simms (30 Pin)	£118.00
4Mb Simms (72 Pin, No Parity)	£125.00
4Mb Simms (72 Pin, Parity)	£129.00
16Mb Simms (72 Pin, No Parity)	£379.00

DISK DRIVES

3½" 1.44Mb Internal	£ 29.00
5¼" 1.2Mb Internal	£ 39.00

IDE HARD DRIVES

170Mb	£ 99.00
340Mb	£119.00
420Mb	£125.00
520Mb	£139.00
850Mb	£175.00
1Gb	£199.00

SOUND CARDS

SoundBlaster Pro Value	£ 59.00
SoundBlaster 16 Value.	£ 85.00
SoundBlaster AWE32	£199.00
Sound Galaxy Pro 16	£ 79.00
Waverider	£ 95.00
Orchid Sound Wave	£155.00

CD-ROM

IBM/Panasonic Dual speed	£ 79.00
CD952 pcmcia Dual speed for notebooks	£299.00
Mitsumi Quad Speed IDE	£135.00
NEC Quad Speed IDE	£139.00

HAND-SCANNERS

Logitech Scanman 32 DOS	£ 79.00
Logitech Scanman 32 Windows	£ 79.00
Logitech Scanman 256 Windows	£ 99.00
Logitech Scanman Colour	£199.00
Logitech Scanman EasyTouch	£189.00
Trust 256 Grey Scale	£ 59.00
Trust Colour	£ 99.00

SVGA MONITORS

14" AOC, 0.28 Dot pitch	£175.00
14" Tatum, 0.28 Dot pitch	£195.00
15" Sony CPD-15SF1, 0.25 Dot pitch	£349.00
17" Sony CPD-17SF1, 0.25 Dot pitch	£689.00
17" Peacock	£419.00

FAX/MODEMS

IBM PCMCIA, V32 Bis	£199.00
Longshine V32 Bis PCMCIA	£145.00
Internal 9600/2400bps	£ 35.00
Internal 9600/9600bps	£ 55.00
Internal 14,400bps	£ 79.00
Internal 14,400bps with Voice	£ 99.00
Internal 14,400/28,800bps	£149.00
External 14,400bps	£ 95.00
External 14,400bps with Voice	£125.00
External 14,400/28,800bps	£159.00
Pace MobiFax 14,000bps	£119.00
US Robotics D/S Worldport	£139.00

NOTEBOOKS

COMPAQ COLOUR FOR £799 !!!!

486SX 33 ,4Mb Ram, 170Mb HDD, 7.8"
Colour Passive screen, T'ball, MS-DOS,
Win, Worldwide Compaq warranty,
External PCMCIA 3½" FDD, etc.

LIMITED STOCKS !!!

ENTA 486DX2 66

4Mb Ram, 250Mb HDD, Mono	£ 949.00
4Mb Ram, 340Mb HDD, Mono	£ 989.00

MITAC 486DX2 66

4Mb Ram, 250Mb HDD, Mono	£ 999.00
--------------------------	----------

SUMMER SIZZLERS

IPC FAMILYMAGIC

486DX4 75MHz, 4Mb RAM, 540Mb HDD, Dual Speed
CD-ROM, 16Bit Sound Card, Mini Tower, 14" SVGA
Monitor, Dos 6.22 & Windows 3.11 Pre-Loaded, 5 MS
Cds: Encarta, Works, Golf, Dangerous Creatures,
Beethoven

£ 999.00

IPC FAMILYMAGIC DX4-100

486DX4 100MHz, 4Mb RAM, 540Mb HDD, Dual Speed
CD-ROM, 16Bit Sound Card, Mini Tower, 14" SVGA
Monitor, Dos 6.22 & Windows 3.11 Pre-Loaded, 5 CD's:
Encarta, Works 3, Golf, Dangerous Creatures, Beethoven

£ 1049.00

IPC PENTIUM FAMILYMAGIC

Pentium 75, 8Mb RAM, 540Mb HDD, Dual Speed CD-
ROM, 16Bit Sound Card, Mini Tower, 14" SVGA
Monitor, Dos 6.22 & Windows 3.11 Pre-Loaded & 5 MS
Cd bundle as above

£1399.00

MM ENTRY LEVEL 486SX

486SX 33MHz, 4Mb Ram, 170Mb HDD, Mini Tower,
14" SVGA Monitor, Dos 5, Windows 3.1

£ 579.00

MM CYRIX 486DX2

Cyrix 486DX2 66MHz, 4Mb Ram, 420Mb HDD, Mini
Tower, 14" SVGA Monitor, Dos 6.22

£ 675.00

MM486DX4 MULTIMEDIA

486DX4 100MHz, Intel, 4Mb Ram, 520Mb HDD,
Panasonic CD-ROM, SoundBlaster 16, 14" SVGA
Monitor, Dos 6.22 & Windows

£ 979.00

MM PENTIUM MULTIMEDIA

Intel, Pentium , 8Mb RAM, 520Mb HDD, Quad Speed
CD-ROM, SoundBlaster 16, 14" SVGA Monitor, Dos
6.22 & Windows

P75 256K £1255.00

P90 256K £1359.00

P100 256K £1405.00

CARRIAGE CHARGES

3-5 DAYS - £7.50 NEXT DAY - £10.00

ON MAIL/PHONE ORDERS PLEASE ADD

CARRIAGE

PRICES CORRECT AT TIME OF PRESS

ALL PRICES EXCLUDE VAT

EDUCATIONAL SOFTWARE

MICROSOFT

Access 2 Win	£ 165.00
Creative Writer	£ 29.95
Creative Artist	£ 29.95
Encarta CD-ROM	£ 69.95
Excel 5.0 Win	£ 155.00
Fortran 5.1	£ 65.00
Foxpro 2.6	£ 79.95
Foxpro 2.6 Win	£ 89.95
Macro Assembler MASM 6.1	£ 65.00
MS-DOS 6.22 & Win 3.11 Work	£ 69.95
Office 4.2 Standard Win	£ 225.00
Office 4.3 Pro Win	£ 299.00
Powerpoint 4.0	£ 155.00
Project 4.0 Win	£ 155.00
Publisher 2.0 Win	£ 75.00
Visual Basic 1 Dos	£ 49.95
Visual Basic Win	£ 65.00
Visual C++ v2 Win (CD)	£ 99.95
Windows Workgroups 3.11	£ 49.95
Windows Workgroups Add-On	£ 49.00
Word 6.0	£ 99.00
Word 6.0 Win	£ 155.00
Works 3.0	£ 75.00
Works for Windows 3.0	£ 65.00

BORLAND

Borland C++ 4.x	£ 129.95
Borland C++ 4.x CD-ROM	£ 129.95
Borland Pascal & Objects 7.0	£ 99.95
dBase V	£ 149.95
Paradox 5 Win	£ 149.95
Turbo C++	£ 39.95
Turbo C++ Visual Edition Win.	£ 49.95
Turbo Pascal 1.5 Win	£ 49.95
Turbo Pascal 7.0	£ 49.95

LOTUS

SmartSuite Ver 3.1	£ 199.00
--------------------	----------

ALDUS

PageMaker 5.0 Win.	£ 275.00
--------------------	----------

WORDPERFECT / NOVELL

Wordperfect 6.x Win	£ 129.00
Wordperfect 6.x Dos	£ 129.00
Perfect Office 3.0	£ 179.00

QUARTERDECK

Clean Sweep for Windows	£ 34.00
Qemmi 7.5	£ 59.95

CLEARANCE ITEMS

Micrografx Charisma	£ 99.00
MapVision Central London	
(previously installed) v1.07 on CD	£ 69.95
MS-Dos v5.0	£ 8.95
Corel Ventura v5 on CD	£ 75.00
Visio v3	£ 69.95
Aldus Photostyler SE CD (OEM)	£ 7.95
Autoroute Express & Sage Moneywise	£ 39.95
Works V3 Upgrade from V2	£ 35.00
Verbatim 5.25" HD Disks, Box of 10	£ 2.50
Sony 5.25" DD Disks, Box of 10	£ 0.99



GIRLS, GIRLS, GIRLS...

THE STAG NITE

CD ROM

1995

The hottest CD in town, with 100s of files with Pin-Ups

£8.95

PLUS FREE 1 YEAR MEMBERSHIP
(includes Membership Discounts at Special Prices)

TEL: 0181 807 9202 FAX: 0181 220 0202
BBS: 0181 807 9995
For free sample Bulletin Board

18 Proof of age required. We do not condone or supply illicit hard core material.

Please rush me a copy of **THE STAG NITE CD ROM**. I am over 18 years of age.

Sign Here _____

Please tick box if you would like Free Membership to the **MEN ONLY CD ROM CLUB**.

Tick here ☐

Full Name _____

Address _____

Post Code _____

Send Payment to: **Fluent Systems, Unit F16A, Cecil Wharf, Lee Valley Trading Estate,
Angel Road, Edmonton N18 8BP.**

Dream machines

There's barely any part of your PC that can't be upgraded, beefed up or window-dressed. Chris Lloyd brings you the stuff of dreams: 20 state-of-the-art chunks of PC kit. Dream on...

That sixth lottery number has just come up and you're a multimillionaire. What do you do? Faint, probably.

After you've gathered your wits together, you can get down to the serious business of fobbing off the family, partying and drawing up those all-important shopping lists. If you still have time for your humble PC, there are plenty of opportunities to blow the wad.

Forget the standard range of cheap peripherals from the box shifters. You want class and you want the best. At the cutting edge of the market there are plenty of beautiful pieces of hardware that can transform your PC into a world-class machine. You've just got to look in the right places. Sure, it

all costs a bob or two, but that's not the point – any music system can play music, but the more you spend on it the better it's going to sound. The returns are less the more you pay, until the improvements become negligible. The same is true for any technology. Any old CD-ROM drive can read a disc, but the more you pay the faster it can do it and the higher the build quality.

Change is the one constant, trite but true. The trouble with being on the cutting edge of PC technology is that it isn't the cutting edge for very long. Suppose you lashed out on all 20 pieces of hardware featured here. Your PC would remain state-of-the-art for about a fortnight. Sad, but there you go. You have to start somewhere and the more money you pay out, the longer your machine remains respectable, but that's all.

Right, let's forget the practicalities for a moment and get stuck into the kit. There's nothing completely outrageous or extravagant here, just examples of the cream of the crop. Dreams can come true. You never know, those numbers might just come up.

Get ready for a trip to PC heaven...

CD-ROM drive – Pioneer DRM-624X
CD-ROM writer – Philips CDD522
Colour laser printer – Hewlett Packard Deskjet 850C
Hard drive – Micropolis 1991
Joystick – Flightstick Pro
Laser printer – LaserJet 5MP
Magneto-optical drive – Panasonic PD Drive
Modem – Arcula 288
Monitor – Idtek R421
Motherboard – Super P50CWS

Mouse – Mouseman Sensa
Processor – Intel 133MHz Pentium
Removable hard drive – 270Mb SyQuest
Scanner – Epson GTx-9000 PCS
Soundcard – Tropez
Speakers – MA-20 Micro Monitors
Videocard – Imagine 128 – 1280
Video conferencing – ShareVision PC3000
Video grabber – FAST FPS 60
Wrist peripheral – Data Link Watch

CD-ROM drive

Pioneer DRM-624X

Tired of changing CD-ROMs? All that opening and closing the drive and swapping disks getting too much? While CD-ROM drives have been getting faster, a select few have also been getting more capacious. The Pioneer DRM-624X is a quad speed drive that uses a magazine to hold six



◆ How many CDs can you fit in your CD-ROM drive, then? This Pioneer DRM-624X holds six – giving you an almost ridiculous 3.7Gb of data at hand. That's a lot of information...

CD-ROMs at once. The different discs can appear as separate drive letters on your system or as one huge CD-ROM. Swapping between discs is quick and completely invisible. It connects via SCSI and performance is excellent, a claimed 150ms access time and 676K/sec transfer rate, well up with the fastest quad speed drives. It's also beautifully built.

CD-ROMs are rapidly becoming the standard way of distributing software, and any PC without one is severely limited. This drive enables you to go further than the average boring, old CD-ROM drive. It's rather flash and if six discs just isn't enough there's also an 18-disc version. Blimey.

Contact: Powermark
Number: 0181-951 3355
Price: £539.33

CD-ROM writer

Philips CDD522

Using CD-ROMs is one thing, writing them is something else. A CD-ROM writer uses blank gold-coloured CDs and can write up to 630Mb of data on to each one. Anything you want to keep can be dumped down on



◆ Perhaps the world's biggest CD-ROM drive – and all you get is one button to press. The CDD522 can do one thing ordinary drives can't, and that's write CD-ROMs

to a CD-ROM. The blank discs only cost about £6 each, so you get acres of storage space for your cash.

The Philips CDD522 is a large and capable beast. It comes complete with CD mastering software and a SCSI card, has a generous 2Mb buffer and can write at double speed. It handles all the CD-ROM formats you could want, including ordinary audio CDs, VideoCDs and PhotoCDs. Featuring copious error correction, it individually calibrates each disc and has proved itself to be a very reliable CD-ROM recorder indeed. Anyone can get hold of silver discs, but a gold disc that you've created yourself has real style.

Contact: CD Revolution
Number: 01932 562000
Price: £1,878.83

Colour printer

Hewlett Packard Deskjet 850C

Printing graphics in black and white is boring – you need colour. The quality of colour printing has come on in leaps and bounds from the colour dot matrix printers of old, which were truly terrible for



◆ In a shock move, designers of the 850C included some blue bits. It doesn't seem to affect the print quality, though, which is superb

pictures. The best way to get decent quality without selling your soul is a colour inkjet. If you haven't seen the output from one for a while you'll be pleasantly surprised – they're now very good indeed.

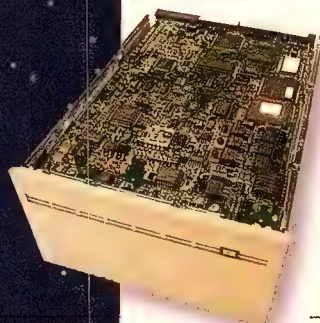
Probably the best of the new generation is Hewlett Packard's 850C. It turns out black and white text at a very credible 600dpi and colour at 300dpi. Colour is enhanced by what HP call Colour Resolution Enhancement technology. For best results you need special coated paper, which really makes a difference. Colour printing is no longer a rough and ready gimmick, it's now rather groovy.

Contact: Alternatives
Number: 01925 700007
Price: £539

Hard drive

Micropolis 1991

There are only two things to worry about with hard drives: size and speed. They can never be too big or too fast – the bigger they are then the more you can store (predictably enough) and the faster they are, the better your access and loading times. The standard IDE interface is all very well, but for sheer power



◆ It may have all the flair of a household brick, but the Micropolis 1991 is a gorgeous thing. You could install over a dozen CD-ROMs on to your hard drive and still have enough left over to fill 12 baskets

you need SCSI. It's faster and enables you to connect additional, bigger drives.

The Micropolis 1991 is a bit of a beast. For a start, its muscle-bound box is physically impressive. It's what's known as a full-height drive, filling two 5.25-inch drive bays. It uses a Fast SCSI-2 interface, an exceptionally fast standard. Transfer rates are just frightening – it's capable of up to 10Mb per second. The killer specification here, though, is the size. This drive can hold over 9Gb of data, that's 9,091Mb to be exact – hence the name – while an average new PC might have a 540Mb hard drive. Our CD-ROM editor was loathe to part with this one.

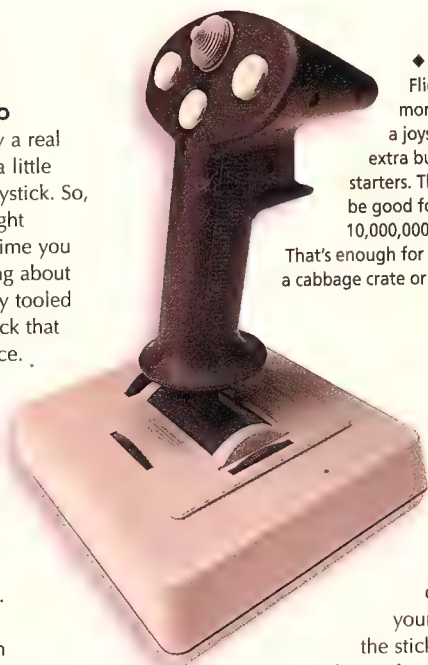
Contact: SMC Computers
Number: 01753 550333
Price: £1,878.83



Joystick

Flightstick Pro

You wouldn't fly a real jet fighter with a little single-button joystick. So, if you're into flight simulators, it's time you stopped mucking about and got properly tooled up with a joystick that does them justice. There's a whole heap of sticks designed specifically to create the authentic flight sim experience. The Flightstick Pro comes from Californian company C H Products and boasts a trigger, three switches and a four-way selector on the top of the grip – the hat switch. Sophisticated flight sims are brimming with controls, usually assigned to the keyboard. With a proper flight sim stick you should be able to operate your weapon selector or change view with-



◆ The Flightstick Pro, more than just a joystick. It's got extra buttons for starters. They claim to be good for 10,000,000 shots each. That's enough for you to bag a cabbage crate or two

out taking your hand off the stick. There are drivers for the Flightstick enabling you to use it with the Microsoft Flight Simulator range, to give you flaps, gear, brakes and view controls. Serious games need a serious stick, like this one.

Contact: GEM Distribution
Number: 01279 822822
Price: £79.95

Laser printer

LaserJet 5MP

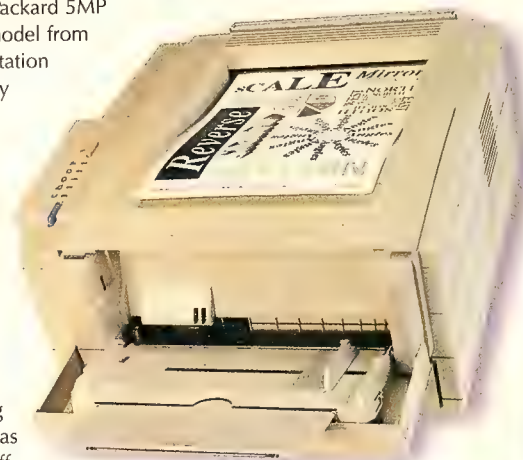
You need a printer. The age of electronic information may be upon us, but nothing beats hard copy. The dot matrix is strictly for printing multi-part forms – they are too rough for anything else – and inkjets are pretty good, but they don't come close to the razor-sharp output of a laser. For quality output there's no real choice: lasers started out at 300 dpi, which was pretty good but the latest crop goes to twice that.

The Hewlett Packard 5MP is a top desktop model from a firm with a reputation for building quality gear. It carries 3Mb of RAM, 35 PostScript fonts and can churn pages out at the rate of six per minute. It uses PCL – Printing Command Language or PostScript printing systems. It even has the dead flash stuff,

like an infrared detector to accept pages from portables. The finished results are good enough to use for everything from the shopping list to wedding invitations.

Contact: Alternatives
Number: 01925 700007
Price: £970

◆ Yes, it looks a lot like all the other desktop lasers, a mild-mannered box, but the LaserJet 5MP turns out to be a particularly accomplished mild-mannered box



Magneto-optical drive

Panasonic PD Drive



This one's a cracker. It's a combination CD-ROM drive and magneto-optical drive in one unit. It's a quad speed drive, well up to the mark specification-wise. Pop in a square-cased magneto-optical disc and you've got a 650Mb rewritable disc – unlike CD-ROM writers, you can delete, too. They're sturdy and at less than £40 each you get lots of Mb for the cash. Backing up your hard drive is easy work. The Panasonic PD Drive is a SCSI-2 device which

◆ Imagine a quad speed CD-ROM drive you can write to as well as read, with 650Mb worth of stuff on each disk. Stop dreaming – here it is

features a highly impressive set of specifications – magneto-optical drives alone used to cost thousands. So, if you're looking for something a bit different and special in the CD-ROM drive department, look no further. This is a brand new gadget which we all want to get our hands on.

Contact: Silica
Number: 0181-309 1111
Price: £586.33

Modem

Accura 288

To run with the 'in' crowd you need to be wired for comms. Add a modem and you can browse the Internet and CompuServe, send e-mail and faxes to all and sundry and gain access to all the information you could ever want – and lots you won't. Time is money when you're on the phone, so if you're serious about it you'll want the fastest available connection.

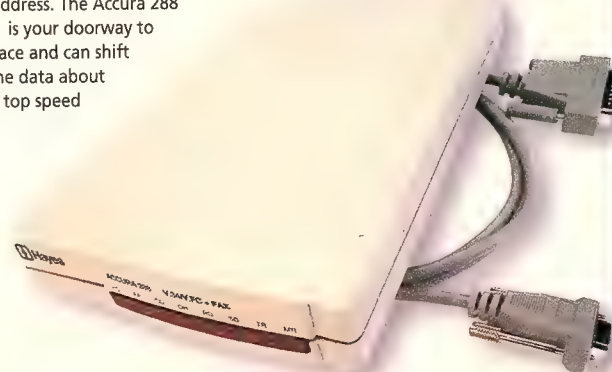
The Hayes Accura 288 supports the latest V.FC standard. It can send and receive data up to a top speed 28,800 bits per second. In addition to this, hardware compression can increase this speed to

◆ You're nobody without an e-mail address. The Accura 288 is your doorway to cyberspace and can shift the data about at top speed

a mega 115,200 bps on uncompressed data such as text.

The AT command set for controlling modems was invented by Hayes and is now the standard for modems. It's a very rare piece of software that isn't Hayes compatible, and the very best way to ensure your modem conforms is to buy a genuine Hayes modem. The Accura has a phone-out socket and comes bundled with Smartcom LE comms software and Smartcom FAX to handle the fax side. Hayes scores with compatibility and a proven track record, and it also looks the part.

Contact: Micro Warehouse
Number: 0800 181000
Price: £216.20



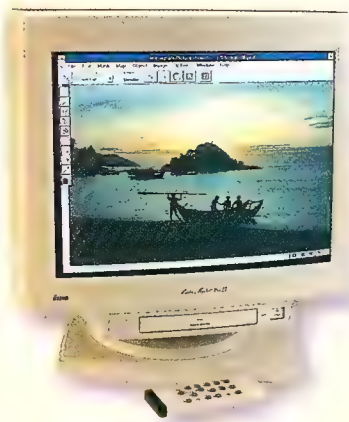
Monitor

Idek Pro21

There's no substitute when it comes to monitors – big ones are definitely better. Once you've used a large monitor, the standard 14-inch affair looks extremely sad. You also want high refresh rates to ease the strain on your eyes and, of course, high resolution.

The best monitors use tubes with a vertical grill mask, such as the Sony Trinitron. They offer a flat screen vertically and an excellent, crisp picture. The Idek Pro21 is a 21-inch monster which boasts one such tube, the Diamondtron. The scan rate goes up to a whopping 120Hz at 640 x 480 pixels, making for a rock-steady screen. Push the resolution up to an enormous 1,600 by 1,200 pixels and it can still manage 72Hz.

It has a remote control that adjusts just about every aspect of the picture, complete with an on-screen display, just like on a high-end television. And, as if all this wasn't enough, it has a motorised tilt and swivel stand for the ultimate in armchair operation.



◆ Guaranteed to impress your socks off. The Idek Pro21 has a superb tube with one very important factor in its favour... sheer size

You'll probably have to get a bigger desk while you're at it.

Your monitor is the window into your PC, so it's worth getting the best you can afford – with this beauty you'll never look back. It certainly made everyone stop and drool in the *PC Answers* office, even if the remote control is gimmicky in the extreme.

Contact: Imago
Number: 01635 861122
Price: £1,519.28

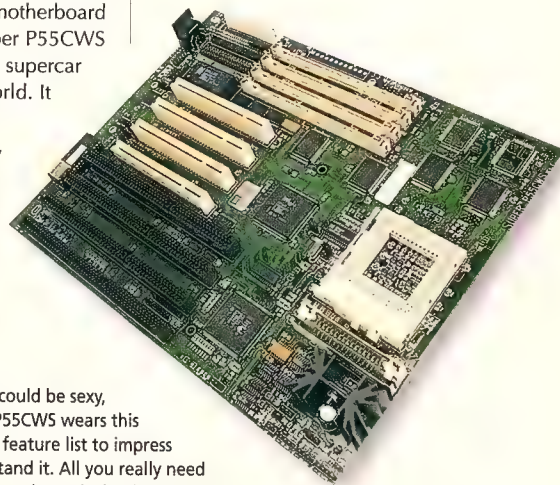
Motherboard

Super P55CWS

You can fit massively fast peripherals to your PC until you're blue in the face and completely broke, but there is a performance ceiling set by your motherboard that you can't cross.

The motherboard is the innocuous-looking piece of circuit board liberally sprinkled with chips that everything else plugs into. The faster your motherboard, the faster your PC can go – everything goes across the motherboard at some point. The Super P55CWS is the bright red Italian supercar of the motherboard world. It boasts a Triton PCI chipset, Enhanced IDE, Plug and Play compatibility and a host of other goodies, including pipelined burst

◆ If ever a circuit board could be sexy, then this is it. The Super P55CWS wears this year's silicon and has a feature list to impress anyone who can understand it. All you really need to know is that it's very quick



synchronous secondary cache – very quick memory dedicated to boosting Pentium performance. This baby takes the state-of-the-art in processors, RAM and everything else you fancy. The deputy editor was soon hovering around this one trying to negotiate a deal on buying one for himself. Hot stuff.

Contact: Boston Ltd
Number: 0181-427 9000
Price: £399

Mouse

Mouseman Sensa



Black Chess varieties have a super-smooth polished finish, while Silver Pearl and Blue Leopard have a velvety feel about them. They work as good as they look, too, fitting the hand wonderfully and sporting three buttons with a light, positive action. The special driver enables you to select the action of the centre and right buttons. You might not be able to fit yourself up with the ultimate PC without getting discouraging letters from financial institutions, but the mouse part of it is manageable.

Contact: Byte Superstore
Number: 0171-374 6444
Price: £58.74

◆ It doesn't have to be cream. The Sensa is a really chic mouse and it's a smooth operator, too – luxury in the palm of your hand

Your right hand will love you for this one. Your PC's mouse covers a lot of miles and you deserve to travel them in style. The Sensa is a beautiful mouse which comes in four flavours. The Deep Wood and

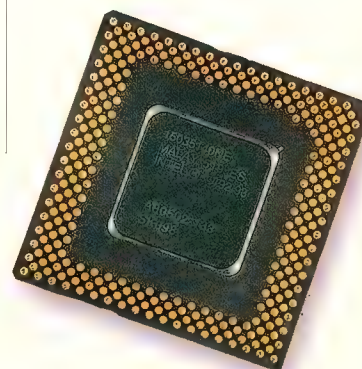
Processor

Intel 133MHz Pentium

The faster your PC the better, and the important element here is that chunk of silicon – processor speed. PC technology moves fast, and no area moves as fast as the technology governing processors. No sooner has one super-fast chip claimed the crown as the world's fastest, than another one comes along. The Intel Pentium started life running at 60MHz, but that didn't last long. Chips running at 66, 90, 100 and 120MHz soon followed. They use pipelining and an internal cache to improve performance.

The hottest chip at the moment is the 133MHz version, the fastest PC processor in the world. All the manufacturers are falling over themselves to build one of these chips into their respective flagship machines. Get one of these slotted inside your case and your PC will be an absolute rocket, and you can brag constantly to your mates.

Contact: Watford Electronics
Number: 01582 487777
Price: approx £750



◆ This is the stuff, the world's fastest PC processor, the 133MHz Pentium. OK, so it doesn't look like much on the outside, but inside there are millions of transistors and a wiring loom that will make your head spin



Got DeskJet?



Actual output from HP's DeskJet driver†
Return-to-application at 2:49, print time 11:00

Actual output from SuperPrint's DeskJet SuperDriver†
Return-to-application at 0:10, print time 7:58

Print Faster. Print Better.

"SuperPrint provides blisteringly fast output from any Windows application ..." – BYTE

- Accelerated, optimized SuperDrivers
- Efficient RAM usage on any PC
- 32-bit SuperRIP™ tames CorelDRAW!

"... hands Windows Print Manager a pink slip." – Windows User

- Work while you print presentations and other long documents
- Compact metafile spooling – up to **19 times** faster than Print Manager

"SuperPrint offers an astounding variety of advanced settings ..."

– PC Computing

- Sharper images, smoother graphics
- Each driver calibrated for your printer for great-looking output right away
- 256 shades of gray, 16.7 million colors
- Lightness, contrast, saturation, sharpness, and individual hue controls give you bright, accurate color
- High-speed color correction engine
- Nine advanced halftoning options, extensible with BMP files



Introductory Special Offer
£53.95 inc. VAT, p&p
(RRP £49.95 plus VAT)
14 days money back guarantee



Standard SuperPrint drives all popular laser, ink-jet, dot-matrix printers, and bitmap formats (TIFF, BMP, etc.). SuperPrint is not for use with PostScript-only printers. Other SuperPrint versions available for large-format plotters, thermal, electrostatic, and dye-sublimation printers, and film recorders. PostScript language option available through ZScript. SuperPrint, SuperRIP, and ZScript are registered trademarks of Zenographics, Inc. All other trademarks are properties of their respective companies. Photo: Bob Clemens.

†4MB PhotoCD output to HP DeskJet 560C; HP driver version 4.1; SuperPrint version 3.1; computer: 486DX-33

Distributed By:
Merisel – Frontline – Northamber – Olivetti Software

BIT (UK) Ltd
Normandy House, Nether Street
Alton, Hants GU34 1EA
Tel: 01420 83811 • Fax: 01420 80657

Removable hard drive

270Mb SyQuest

The floppy disk is becoming increasingly limited – the 1.44Mb it can hold is just too small and it is, let's face it, horribly slow. What you need is a disk as fast and as big as a hard drive. Enter stage left, the remarkable, removable hard drive. They work in a similar way to normal hard drives, except the disk isn't spinning in a vacuum, so you can take it out.

The biggest name in removable hard drives is SyQuest, a company which started out with a 5.25-inch drive packing 44Mb on to each disk. The latest generation has shrunk physically – the disks are now 3.5-inches, and have grown in capacity to 270Mb. They use either a SCSI interface or connect to your PC's parallel port. The SCSI version is faster, with an average seek time of 13.5ms and data transfer rates of up to 4Mb per second. This gives you the performance of a hard drive and a



◆ Almost unlimited hard drive capacity is not a dream. The SyQuest uses removable disks the size of three floppies on top of each other but with the capacity of 188 of the little chaps

limitless capacity, if you need more room, simply get another disk. Once you've got yourself a removable hard drive, you can be totally blasé about installing things. So, if you decide to install every game you can lay your hands on, no problem. There are loads of different types of removable media, but the SyQuest is faster than most, something we all greatly appreciate.

Contact: Watford Electronics
Number: 01582 745555
Price: £433.58

Scanner

Epson GTx-9000 PCs

Big, flash colour pictures are a wonderful sight to behold, and the best way to get them is by scanning. Hand scanners do the job, but are cumbersome and can only scan small areas. For serious scanning, you need a flatbed.

The Epson GTx-9000 has a name like a sports car and a spec to match. It can scan a full A4 page at 600 pixels per inch – add software interpolation and you get 2,400. You can scan tiny scraps of paper and produce enormous, highly detailed images. It reads 10-bit for each colour and converts them into 8-bit before sending it to your PC. This gives you superb 24-bit colour – that's up to 16.7 million different ones.

It's a piece of cake to use, and not unlike a photocopier. Put your paper in, set the resolution and scan away. Scanning like this used to be the province of repro houses, but now you can get comparable results on your desktop – it's suitable for professional reproduction. Along with the grey box

you get an Adeptec SCSI card to drive the scanner and the excellent *Photoshop LE* to manipulate your images once you've grabbed them. Scanning is the shortcut to high quality images and the GTx-9000 PCS is currently in pole position.

Contact: Epson
Number: 0800 289622
Price: £1,009.33



◆ Your passport to a hard drive jammed with superb graphics, it scans at 600 dpi with 30-bit colour. All the Epson GTx-9000 PCS needs is a set of go-faster stripes and a spoiler to really look the part

Soundcard

Tropez

If music be the food of love, then the PC can often go hungry. PC music started as terrible bleepy tunes from the PC speaker before graduating to scratchy, low resolution samples. The favourite flavour at the moment is wavetable synthesis, which uses 16-bit stereo sampled sounds for music, rather than the synthetically generated sounds of the FM synthesis method of old. At last – excellent sound, sampled from real life.

The Tropez soundcard features 128 sounds and a complete sampled drum set on a 2Mb ROM chip. Add some memory to the card and you can use your own samples as MIDI instruments, any sound you like. It can carry up to 12Mb, turning your PC into a complete sampling synthesiser. The bundle includes *Cakewalk Express*, a MIDI sequencer and a

clutch of utilities for recording and editing sampled sounds.

On the sound purity front, the Tropez stands up well, the DAC uses 64 times oversampling and an eight times interpolating filter. Signal to noise, distortion and crosstalk are all very good. It also carries an IDE interface for your CD-ROM drive and a second internal MIDI port.

All of the best, new games use wavetable sounds – it's worth upgrading for this alone. If you're trying to create music, you've got no excuse – you need a wavetable card. Once you've sampled this beauty, the standard SoundBlaster compatible card sounds an extremely pale second.

Contact: Et Cetera
Number: 01706 228039
Price: £249

◆ The Tropez delivers General MIDI wavetable synthesis. Gosh. Basically, it's a full sampling synthesiser



Speakers

MA-20 Micro Monitors

The single biggest influence on sound quality of your PC is your speakers, and the majority of speakers sold for the PC are truly awful. Nothing ruins a soundcard's output quicker than tinny little boxes. You can throw power at the problem, which can help, but you often just end up with the same poor quality sound, only even louder and bassier.

The Roland MA-20s have been devel-

oped from studio monitors, where sound purity is essential. They are reassuringly heavy and have two inputs with separate volume control and a microphone jack, so you can mix your sound source as you like it. They are also properly magnetically shielded, unlike many speakers so advertised which are actually poorly shielded and unsafe near monitors. Plug these into your soundcard and your PC will sound sweet and clear. Play on.

Contact: Roland
Number: 01792 702701
Price: £198

◆ Beautifully made and capable of producing beautiful sound, the Roland MA-20 speakers make the average PC multimedia speakers look cheap and nasty... which they are



Videocard

Imagine 128 – 1280



◆ The Imagine 128 doesn't just give Windows a boost, it gives it a rocket pack. Sporting state-of-the-art silicon and heaps of RAM, it's totally luscious

Graphics are sexy... fast graphics are even sexier. For big, colourful images displayed at high speed you need a fast graphics card. The card dictates the resolution, the refresh rate and number of colours you can display. The faster and more powerful the processor chips the faster your card.

The current state-of-the-art is a 128-bit processor, and one such

chip sits on the Imagine 128. The card also runs at wonderfully high refresh rates, boasts hardware clipping, fast VRAM memory and, of course, a Windows accelerating chip. The 4Mb of video RAM enables you to run Windows with 16.7 million colours at up to 1,152 x 864 pixels with a refresh rate of 100Hz. There are only a few monitors that can keep up.

The HawkEye control panel gives you bags of control, including a virtual Desktop, gamma correction, screen zoom and more. With the virtual Desktop you can enjoy either a doubled height or width screen, which scrolls when your mouse hits the edge.

This is a true monster of a graphics card that is guaranteed to have your PC running Windows quicker than you ever believed possible. The generous amount of memory means that you don't have to compromise between pixel size and colour depth. Now, at last, you can have both. The Imagine 128 card is a totally desirable piece of kit.

Contact: Number Nine
Number: 01256 381194
Price: £891.83

Video conferencing

ShareVision PC3000

Still using boring old voice telephones? Using a video phone you get to look as well as listen, adding volumes to any communication. Previous systems have used the kind of networks you only find inside corporates. Creative Lab's ShareVision PC3000 takes a different approach, using an ordinary phone line to pipe your visage across the world. You get all the kit you need. The image is captured by a small CCD camera, digitised by a VideoBlaster RT300 digitiser and then sent off

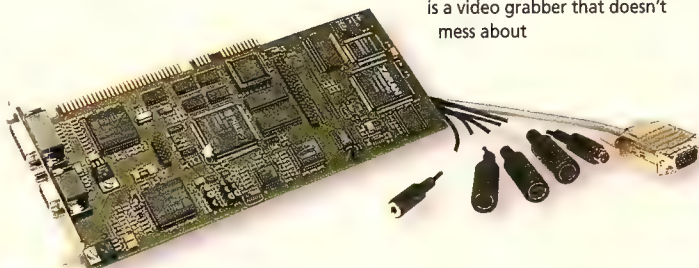


Contact: Powermark
Number: 0181-951 3355
Price: £1,173.83

◆ A whole new angle to phoning, the ShareVision system sends your image along with your dulcet tones. Check you don't have spinach between your teeth before you ring

Video Grabber

FAST FPS 60



◆ If you want full television resolution digital video, this is the card for you. The FAST FPS 60 is a video grabber that doesn't mess about

Digital video is truly brilliant, enabling you to enjoy an incredible amount of control over the moving image and perform tricks only possible on your PC.

The crunch, however, is getting your image digitised in the first place.

Traditional cards are based around *Video for Windows* and don't cut the mustard for real DTV.

The FAST FPS 60 not only cuts it – the card shreds it! The secret is the hardware M-JPEG compression. This enables it to

grab full-screen, full-size video. No more little windows or jerky playback, you can have the real thing. It overlays a live window on to your PC in full 24-bit colour. You get two video inputs and a video output which enables you to display your work on a television and then record it to video. You can mix between sources using fades and dissolves and load your saved sequences into a digital video editor and perform image processing and editing like any other digital image. Desktop video is going to be big and it's kit like this that's going to fuel the revolution.

Contact: Mar-Com Active
Number: 0181-891 5061
Price: £586.33

Wrist Peripheral

Data Link Watch

Whenever new technology comes along, somebody tries to cram it into a watch. Remember calculator watches? Number crunchers hampered only by the fact that you needed a pin to press the buttons.

The Timex Data Link watch is a slightly more practical invention. The gadget communicates with your PC, enabling you to transfer data on to your wrist – information on the move. It's ideal for telephone



numbers, anniversaries, appointments, alarms and to-do lists. You are, though, limited to 70 entries.

All you do is type in what you want into a Windows program, set the watch to comm mode and hold it in front of the screen. The data is transmitted using a series of black and white lines, just like a bar-code. You can now wander abroad without your Filofax causing an unsightly bulge in your jacket and still have that important information with you, on your wrist. It's flash and a bit over the top, but what the heck? **PC ANSWERS**

Contact: Timex
Number: 0171-630 8180
Price: £129

◆ The Data Link, a remarkable timepiece that not only tells you what time it is, but where you should be, your broker's telephone number and the date of your mum's birthday. Wow

WIN! WIN! WIN! WIN! WIN! WIN! WIN! WIN!

LIVE THE DREAM!

You haven't seen hardware of this calibre since the US Navy last went on manoeuvres... it could be yours

T

his could be your PC's lucky day. If a bit of kit from our dream machine feature – starting on page 32 – has caught your eye, get writing, because PC Answers has got over £1,500 worth to give away. Just answer a question or six and you could be the winner of some state-of-the-art technology.

We also need to know which particular piece of kit takes your fancy. If you don't include this vital nugget of information we won't know what to send you if your entry comes out of the hat, so write that bit down first. These are the prizes up for grabs. Good luck to one and all.

Imagine 128 1280 from Number Nine

The ultimate graphics card. This card packs the very latest graphics processor and is horridly fast – Windows will move like it's never moved before. It carries 4Mb of RAM, enough to give you 24-bit colour at up to 1,152 by 864 pixels. It can also stretch to 1,600 by 1,280 if you settle for a mere 65,000 different colours. An incredible card worth the best part of £900 and looking for a new home.

Tropez from Et Cetera

The sound to be playing these days in wavetable, this uses sampled sounds as instruments rather than the bleepy FM synthesised stuff of old. The Tropez has the full General MIDI compliment of 128 sounds and a drum kit held in a 2Mb ROM. If that's not enough, you can always add more memory as you need it and include your own samples, giving you a full sampling synthesiser inside your PC.

MA-20 Speakers from Roland

Forget those squeaky little speakers – you need something like these. The MA-20s are derived from real studio monitors where purity of sound is the biggest concern. They boast 15W of power, two separate inputs, a microphone jack and are magnetically shielded. They are nice and heavy, a sure sign of something good in the speaker department. Your music, samples and games will never have sounded better.

Data Link Watch from Timex

Never be without that all-important telephone number with this amazing watch. It can store up to 70 entries taken from your PC – just point it at the screen and its little electronic eye reads the data. A technological marvel – you've no excuse for missing a loved one's birthday with this strapped to your wrist!

Flightstick Pro from CH Products

The joystick for serious flight simulator pilots. It's ergonomic, superbly built and simply chock-a-block with extras. You get three buttons on the top you can assign to different

◆ The questions are easy, stamps are cheap, and the prizes are delicious. You've nothing to lose and everything to gain... what are you waiting for?



functions and a little four-way switch designed to control the view mode. No more scrabbling about on the keyboard at crucial moments, the controls are at hand.

Mouseman Sensa from Logitech

The sexiest mice going. These look like no other electronic rodents – you get either a super-smooth or velvet finish in four eye-catching designs. They have three buttons and fit snugly into your hand. Very smooth operators. **PC ANSWERS**

We are asking the questions

- 1** What is the maximum size at which the Imagine 128 1280 graphics card display a 24-bit screen?
- 2** How many instrument sounds does General MIDI have?
- 3** How many inputs are there on the MA-20 speakers?
- 4** How many entries can the Data Link watch hold?
- 5** How many buttons on the top of a Flightstick Pro?
- 6** How many styles of Mouseman Sensa are there?

Don't forget to say which prize you want to take home if you win.

The rules of the game

1 Answers on a postcard or stuck down envelope to reach us before Friday 1 September at PC Answers, Dream PC Competition, 30 Monmouth Street, Bath BA1 2BW. Don't forget to put your name and address on your entry and which piece of hardware you would like to win if your card come up trumps for you.

2 The competition is not open to employees of Future Publishing, Number Nine, Et Cetera, Roland, Timex, CH Products or Logitech. You'll have to sit this one out.

3 Only one entry per person, please – let's keep this above board. We can spot cheats a mile off.

4 Absolutely no moaning about the prize or the winners, the judge's decision is final.

5 The results will be printed in PC Answers issue 21 (November) which goes on sale on Thursday 28 September. Yes, you'll have to wait that long!

WIN! WIN! WIN! WIN! WIN! WIN! WIN! WIN!

Quick Silver PCs

486DX2-50	£748
486DX2-66	£790
486DX4-100	£834
Pentium 90	£1299

The above Quick Silver range of computers are built to the highest standards with total upgradability in mind.

All prices above are based on the following Specifications:-

- Mini Tower Case
- Vesa Green Motherboard
- 4Mb RAM (exp 128Mb, 72pin Simms)
- 545 Mb Hard Drive
- 3.5" 1.44 Mb Floppy Drive
- Vesa Multi I/O (4 x HD/FDD)
- 1Mb Vesa Accelerated VGA (exp 2Mb)
- 14" 0.28, MPR2 NI, 1024 x 768
- 102 Key Keyboard & 3 Button Mouse
- DOS 6.2 & Windows 3.1

Please adjust all Vesa to PCI when Purchasing Pentium.

Ladbroke Computing International are one of the longest established home computer dealers in the UK. We have an extensive customer service policy which involves testing of all hardware prior to despatch to ensure that the goods arrive in working order. Offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup.

All prices/specifications are correct at copy date 10/4/95 (while stocks last), and are subject to change without prior notice.

Components

Hard Drives

420 Mb IDE	£119
540 Mb IDE	£132
850 Mb IDE	£185
1.2 Gb IDE	£265
353 Mb SCSI	£132
520 Mb SCSI	£145
1 Gb SCSI	£375
1.7 Gb SCSI (formatted)	£469
2 Gb SCSI	£725
2 Gb SCSI A/V	£810

Floppy Disk Drives

3.5" 1.44Mb	£19
5.25" 1.2Mb	£36

Multi-Media

Sound/Media Cards

Sound Expert Deluxe 16	£50
Sound Wave 32	£89
S/Blaster 16 Value	£61
S/Blaster 16 MCD	£72
S/Blaster 16 AdSP	£84
S/Blaster 16 SCSI	£87
S/Blaster AWE 32	£180
Trust M-Peg Player	£199
Trust PCTV Card	£154
Trust Game Viewer	£87



Quick Silver Upgrade Options

Ram Upgrades

Upgrade RAM from 4Mb to 8Mb	£145
Upgrade VGA from 1Mb to 2Mb	£45

Multi-Media Upgrades

Dual speed CD-Rom, Soundblaster 16, 25 Watt Speakers	£169
Soundblaster 16	£60
Quad speed CD-Rom	£119

Monitors Upgrades

Upgrade 14" to 15"	£75
Upgrade 14" to 17"	£235
Upgrade 14" to 20"	£469

Software Upgrades

Microsoft Works (CD-Rom)	£25
Works, Publisher, Money, Golf	£92
Microsoft Office	£389

Components

Processors

UMC 486Sx-33	£43
SGS 486 Dx2-50 (5v)	£53
Cyrix 486Dx2-66 (5v)	£85
Intel 486Dx2-66	£99
AMD 486Dx4-100 (3.45v)	£145
Intel 486 Dx4-100 (3.3v)	£189
Intel Pentium 60	£195
Intel Pentium 66	£219
Intel Pentium 90	£399

Motherboards

486-128k, Zif, 3xVLB, Award	£57
486-256k, AMD Dx4, 3xVLB	£57
486-256k, Dx4, 3xVLB.AMI	£78
586-256k, P60/66, PCI Award	£125
586-256k, P75/90, PCI Award	£149

Memory

256k x 9bit - 30pin	£10
1Mb x 9bit - 30pin	£29
4Mb x 9bit - 30pin	£107
8Mb x 9bit - 30pin	£220
4Mb x 9bit - 72pin	£125
8Mb x 9bit - 72pin	£220
16Mb x 9bit - 72pin	£369

Cases

Desk Top Case (inc Display)	
Mini Tower Case (inc Display)	
Large Tower Case (inc Display)	

Graphics Cards

1Mb 8900 Trident	
1Mb 9400CXi Vram Trident	
1Mb 5424 Cirrus Logic	
1Mb Orchid Kelvin	
2Mb Diamond Stealth 64 (Dram)	
2Mb Diamond Stealth 64 (Vram)	
1Mb Orchid Farenheit 64	
2Mb Orchid Farenheit 64	
2Mb Orchid Farenheit Pro 64	
4Mb Orchid Farenheit Pro 64	

Controller Cards

Multi I/O Card	
Multi I/O Card VLB	
Multi I/O Card PCI	
Enhanced Multi I/O Card VLB	
Enhanced Multi I/O Card PCI	
Adaptec 1542 SCSI Controller Kit	
Adaptec 2940 SCSI Controller Kit	
Bus Logic SCSI Controller Kit	
Future Domain SCSI Controller	

How to pay

You can order by mail, Cheque/P. Orders made payable to **Ladbroke Computing**. Or give your credit details to one of our telesales staff

Delivery

Postal Delivery is available on or less than £40 (Normally £3), plus for details. For orders above value of £40 this will be charge £7 for insured courier. Saturday Delivery £20. All the above prices for mainland U.K.

All prices are subject to VAT

Ladbroke Computing

33 Ormskirk Road, Preston,
Lancashire PR1 2QP

Tel: 01772 203166 / Fax: 01772 561071

CD-Roms

Panasonic 562B Dual Speed	£84
Creative Labs CR563 Dual Speed	£94
Aztech Dual Speed IDE	£82
Mitsumi Triple Speed IDE	£108
Mitsumi FX400 Quad Speed IDE	£124
Gold Star R540B Quad Speed IDE	£124
Nec Quad Speed IDE	£148

Speakers

Soundwave 10 (80 Watts)	£34
Soundwave 20 (25 Watts)	£22
Soundwave 30 (25 Watts)	£20
Soundwave 40 (15 Watts)	£14
Soundwave 120 (120 Watts)	£49

Desk Top Publishing

Scanners

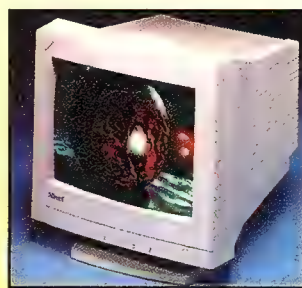
A4 Flatbed 24bit Colour 1200dpi	£345
A4 Flatbed 24bit Colour 2400dpi	£420
Hand Scanner 24bit Colour 400dpi	£96
Hand Scanner 256 G/Scale 400 dpi	£36
Digitizer 12 x 12 inch	£119
Digitizer 18 x 12 inch	£199

Operating Systems

Software

Dos 6.2 & Windows 3.1	£59
Dos 6.22 & Windows 3.11	£75
OS/2 Warp	£80

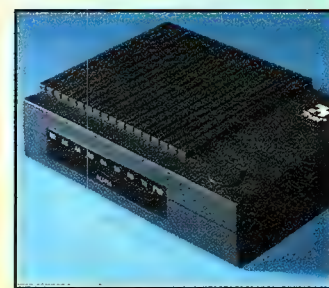
Monitors



14" 0.28 Mono	£65
14" 0.31 Interlaced	£139
14" 0.28 Non-Interlaced, MPR2	£149
15" 0.28 Non-Interlaced, MPR2	£210
17" Multi-Media/PCTV/Speakers	£365
17" 0.28 Non-Interlaced, MPR2	£387
20" 0.31 Non-Interlaced, MPR2	£644
21" 0.28 Non-Interlaced, MPR2	£1061

Outpost	£30
Frontier Elite 2	£23
Magic Carpet	£29
Little Big Adventure	£31
Super Harrier/Mig 29	£12
Under a Killing Moon	£34

Fax/Modems



14,400 BT Approved, Internal	
14,400 BT Approved, External	
14,400 Voice/Fax, Internal	
14,400 Voice, Sound, CD, Internal	
28,800 BT Approved, Internal	
28,800 BT Approved, External	

All our Fax/Modems come complete with Comms & Fax Software

Overlord	
Microsoft FlightSim New York	
Return to RingWorld	
Fun School 5 Space	
Fun School 5 Dreamland	
Fun School 5 Time	
OS/2 Warp	

Call for latest software prices

FILE OPEN



Technology is stifling talents we once took for granted, such as spelling and writing.

Steve Patient can't even forge his signature

Somehow it's got to the point where stores are no longer prepared to accept my cheques without six different forms of identification. It may sound impossible, but I've lost the ability to write my own signature. National Westminster's only suggestion is more practise, but surely the whole point of a signature is that you just do it? At the moment, almost anyone can come up with a more convincing copy of the signature on my bank card than I can.

Strong skills

Handwriting has never been one of my strong skills, although as a teenager I did learn – by constant practice – to write legibly, even if it did mean giving up joined up writing. Don't get me wrong, I'm literate, know how to spell, and understand the difference between mete, meet and meat. I just can't hand write legibly anymore.

The culprit is the word processor. Word processing

changed my whole approach to the production of words. As one of those sensible sorts who took the trouble to learn to touch type, I could immediately churn out text three times faster than when writing by hand – and that on an old, Olympia, wrist building, manual, office typewriter.

What's for dinner?

Real word processors upped the speed even further, though at the cost of forearm muscularity. It's now reached the point where even a shopping list is out of the question – I keep it in my head and forget things instead.

All of which makes me wonder – apart from why the banks won't issue me with a card containing a picture and what I'm going to have for dinner having forgotten to buy any – how many other basic skills the PC is deleting from our lives under the guise of enabling us to do something faster or more easily. Spelling proved an early victim.

The number of letters that arrive – many from organisations such as the utility companies, building societies, insurance companies and others who's business is demanding money with menaces – with correctly spelled words in incorrect contexts is astonishing. A tribute to the inability of so many to distinguish between a spell checker and a dictionary.

Yet, while I've lost the ability to write, I haven't forgotten how to read. These days reading, especially reading something that you've just written to check it makes sense, is becoming less

common as people gratefully unload a tedious task on to technology – even when it's completely inappropriate.

Personally, I gave up using a spell checker the first time it passed a 'form' that should have been 'from'. A small error, but errors like this make you – or your organisation – look careless at best and can change the meaning at worst. Look, I realise your spell checker says this letter is OK but, even so, I still want a space between 'pen' and 'is' in the phrase 'the pen is mightier than the sword'.

Which brings us to numbers. Meandering down memory lane recently in the company of my brother I spotted a slide rule on the conversational grass verge. He mentioned that he still had one, and – no longer having a

use for it – gave it to me. No, I don't have a use for it either, but just wait until civilisation collapses – then you'll want to borrow it.

While demonstrating its mysteries to a friend who'd

never seen one before, I was surprised at just how long it took them to grasp the idea that the user had to keep the magnitudes of the numbers in his or her head. Once that was sorted, the next hurdle was explaining the subtle difference between precision and accuracy.

Wrist watch

For those few who aren't aware of the difference, wrist watches probably explain it best. A digital watch is always precise – often to hundredths of a second – but that doesn't make it any more

accurate than an analog watch: it can still be five hours out.

(Adopt northern accent here). When I were a lad we knew about things like this, a pint cost tuppence halfpenny and the bar maid could work out your change from two bob in her head. (End of northern accent). The PC, as with all other technologies, is gradually deskilling us.

Friendless

Already, it's virtually impossible to make friends with anyone who doesn't have a telephone. Soon it will be impossible to send a letter to anyone who doesn't have an e-mail address.

People can become so used to having a service provided by technology that they don't entirely trust it delivered any other way. As the PC continues to provide ever more services we will all become less able to cope without it. Mothers will say to their children, 'Don't forget your PC', as they rush off to school. Can you remember when games were something you played with a friend or – hunched round a board with various playing pieces – your family?

Fortunately, every threat contains the seeds of opportunity. People used to blame mistakes on computers in the days before they understood that the programmer was at fault, but PC dependency is now so commonplace you can use your PC's absence as a socially acceptable excuse, 'I can't do life today because my PC is broken and I'm hiding in the cupboard under the stairs until it's fixed'. **PC ANSWERS**

Steve Patient started in PC support, but has been writing – well, tapping away on his word processor – about PCs for seven years, now. You can contact him at pcanswers@futurenet.co.uk

“Already, it's impossible to make friends with anyone who doesn't have a telephone”

War of the words

You're attached to your word processor, but are you using the right one? Hamish Campbell reports



Arguments about the benefits of word processors rage on, with most people convinced that the one they're using is best – even if it's *Write*, the primitive word cruncher supplied with Windows. Or perhaps you might think that Windows word processors are all much of a muchness, with the only differences being the price and the length of the obscure feature list.

It just isn't so, a fact hammered home when we started testing all the major Windows word processors currently available – focussing

especially on just how well they coped with modern word processing needs.

As well as checking how each package performed everyday editing tasks, we also designed a fairly complex document and attempted to create it in each of the word processors tested. You can find this test *WordStar* document on the CD-ROM, in the */wps* directory.

As you might expect, some took everything in their stride, while one or two fell at the high fences, either because they were never

intended to be used for functions once reserved for other applications – such as desktop publishing – or, frustratingly, because an essential feature hadn't been sufficiently well implemented.

So, if you're contemplating moving up to a Windows word processor, or simply find your current software too limiting, don't even think of reaching for your cheque book until you've read our essential guide to what's on offer.

Word Express 1.0

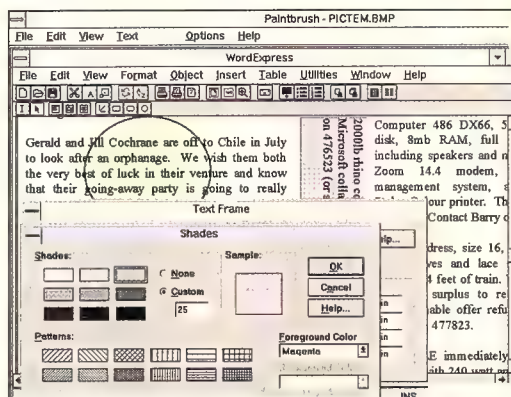


For a word processor that comes on only two floppy disks, this Microsoft *Word 2.0* lookalike packs a hefty punch. But don't expect it to behave too much like its distant cousin. *Word Express* has some quite quirky ways of doing things. Once you get used to them, though, they become second nature.

For instance, if you want to insert a graphic into your document, you have to switch from text mode to object mode; this can be done from the button bar or you can just press the right mouse button to toggle between modes. All you have to do is remember which mode you're in.

The more common graphics formats – PCX, TIF, BMP and WMF – are supported, and *Word Express* enables you to flow text around graphics and anything else in a frame. To reposition a frame, you have to switch to object mode, select the frame, and then move it using normal drag and drop techniques.

For budding Picassos, there are a few drawing tools and, unusually, you draw directly into your document – you can achieve some bizarre effects using this feature. If you want to print text at right angles to other text, you can do this quite easily by typing the text into a text frame, which can then be printed in landscape



◆ In this busy shot a text frame has been tipped on to its side and painted purple. The world needs features like this!

or even upside down. A powerful feature for such a small package.

You can include headers and footers, but these are treated as single formatting entities, which means that, if you want a footer but no header on the first page, you have to forgo headers elsewhere in the document. *Word Express* also has a mail merge feature, but it's primitive – if you're going to do any serious mail merging, buy another word processor.

Word Express is capable of producing not only ordinary documents and memos, but quite



complex newsletters and brochures. Even better, it won't break the bank, it won't gobble up your hard drive, and you won't need the obligatory 8Mb to run it. And even more good news: there's a shareware version available – so you can try it out before you buy.

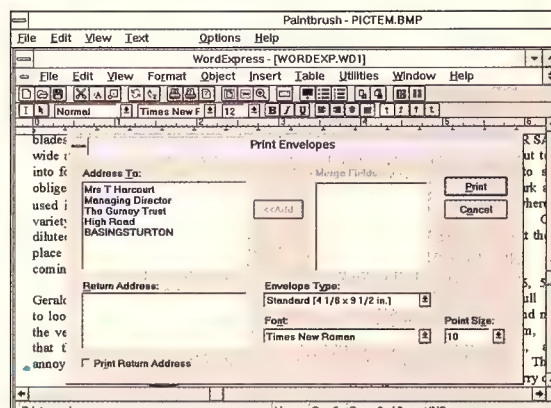
Contact: The Thompson Partnership

Tel: 01889 564601

Price: £48.83

Recommended Hardware: 386, Windows 3.0 or higher, 4Mb RAM

PC Answers Rating: 90%



◆ Envelope creation is a snap – just click on the envelope icon and *Word Express* automatically fills in the address, if you have one in your document

SHIFT
KEY

WordPerfect 6.1

WordPerfect 6.1 for Windows is

one of the most sophisticated and feature-laden word processors on the market today and it's a joy

to use. Setting up columns, headers, footers, and importing and manipulating graphics is a breeze, all done with a click or two of the mouse. WordPerfect's graphics-handling capabilities are also superb – using the image tools, you can rotate, crop, mirror and implement a whole range of operations on any selected image.

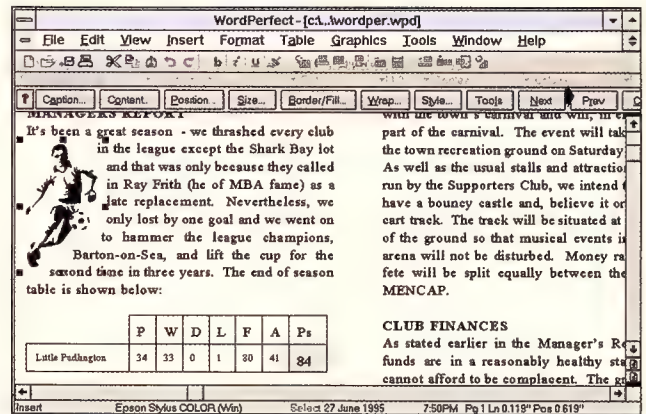
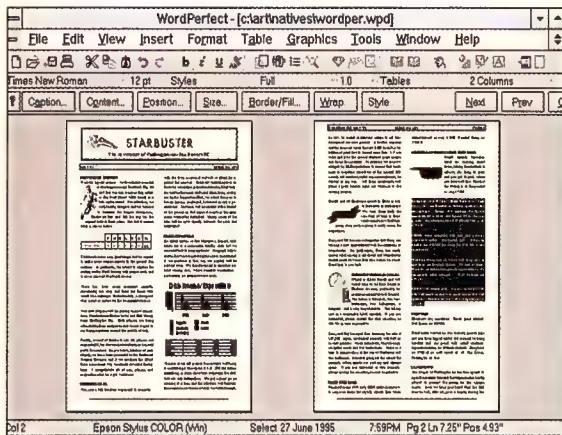
If you're still not happy with it, a double click on the image takes you into WordPerfect

Draw, where you can mess around with it to your heart's content. Most word processors have a tables feature, but with WordPerfect you can use standard spreadsheet formulae and functions in tables. So, with built-in drawing, charting, and spreadsheet capabilities, you can create the most complex document without ever leaving WordPerfect.

As with all high-end word processors, the package supports mail merge with conditional printing. You can create a data file within WordPerfect or use information from a database, spreadsheet or text file. If you ask it to, WordPerfect also automatically creates and prints an envelope for every document in a mailing list.

With its highly developed Indexing, Table of Contents, Table of Authorities, Footnote, Endnote, Master Document, and other document management features, WordPerfect is excellent for producing documents such as theses, manuals and even books. It has to be said, however, that these are all features largely ignored by the majority of users. But then,

◆ You can edit in any view mode. In this shot, some text is about to be cut. The chart was created using the built-in charting tool



◆ WordPerfect is very strong on the control and management of graphics. Here, extra gloss is added to the document by contouring text around the player

WordPerfect 6.1 is aimed squarely at the corporate market, and at power-users who haven't a clue what outlining is but want it anyway.

If you have a very deep pocket, need at least half of the features that WordPerfect has to offer, and, of course, possess a PC with the clout needed to run it, why not go for it? After all, you can rest assured you won't outgrow it and you never know – one day you might just need an outliner.

Contact: Novell UK

Tel: 01344 724460

Price: £190

Recommended Hardware:

486SX, Windows 3.1, 8Mb RAM

PC Answers Rating: 90%

WordStar 2.0

WordStar has looked at the gap

between word processing and desktop publishing and narrowed it. WordStar 2.0 for Windows uses frames, style-sheets

and templates to enable you to produce exciting documents with flexible layouts.

When you first start WordStar 2.0, the default template displays a full-page frame into which you can immediately begin typing text. You can use this default template as the basis for most of your writing needs. Alternatively, you can create your own templates or use one of the many predesigned ones to create your most complex documents.

Once you get used to using frames to hold text and graphics you can create almost any layout imaginable. Frames can be moved

around, sized, and underlying text made to flow around them.

A very useful feature links text frames, so text flows between them – even if the linked frames are many pages apart. This enables you to do clever tricks, like end a column with 'Continued on page 23' and flow the remaining text into a frame on a page much later in the document.

On the graphics front, WordStar can import a large range of graphics formats but its own drawing and editing facilities are a bit on the primitive side.

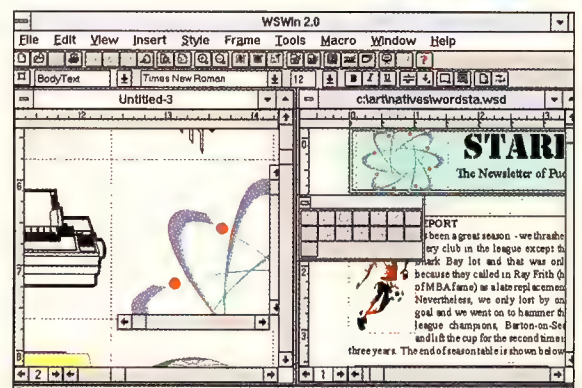
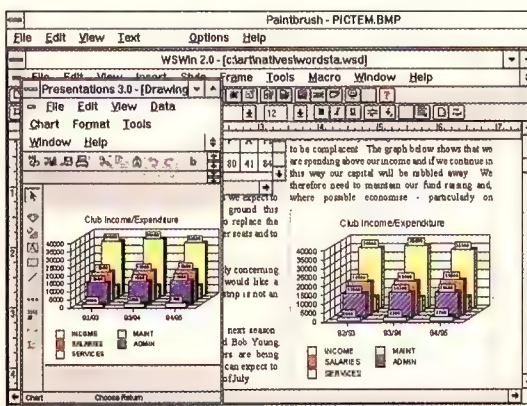
Despite its heavy emphasis on desktop publishing, WordStar 2.0 is a competent word processor. It features the usual Windows drop down menus, tool and button bars and so on, although it isn't always immediately obvious how you go about using these.

Mail merge is well implemented and you

can use existing dBASE or comma delimited files. If you need to create a mailing list, WordStar comes with a separate program, MailList, which you can run from Program Manager or from the editing screen.

WordStar has everything a good word processor should have, including spelling checker, grammar checker, thesaurus, and so on. It does lack some of the features found in the business

◆ WordStar can accept objects from OLE servers. In this one, a chart has been copied in from a different application



◆ Copying a graphic from one document to another is a cinch and the graphics tool, shown in the right hand document, has a range of drawing and control features to make things even more interesting

word processors – such as text distortion tools – but you can achieve some interesting text effects by stretching and rotating text frames.

The documentation is a bit skimpy and not terribly well-written, so it's sometimes a challenge to find the feature you need. If you want a competent word processor with a few desktop publishing features WordStar 2.0 for Windows fits the bill.

Contact: Softkey International (UK) Ltd

Tel: 0181-789 2000

Price inc VAT: £49.99

Recommended Hardware: 386SX, Windows 3.1 or higher, 4Mb RAM

PC Answers Rating: 89%

SHIFT
KEY

Fine Words

RECOMMENDED
PC ANSWERS

Here is a smashing little word processor that doesn't make your brain reel with a million features you never ever want to use. In fact, *Fine Words* is about as vanilla-flavoured a word processor as you're likely to come across. There are no columns, no tables, no grammar checker, no indexing, no table of contents, no macros and, if you're looking for drag and drop text editing, forget it. What *Fine Words* does offer, though, is ease of use. You can learn it in an hour or two – all of it.

Fine Words includes a charting application and database. You use the former to create

charts to insert into your documents and the latter to create lists for mail merging. For a chart you go to the charting application and type in the data or use the clipboard to get it from another application, such as a spreadsheet.

Getting the chart into your document is then simply a matter of selecting Chart from

the Insert menu. The database/mail merging application is powerful; you can have any number of records up to the capacity of your hard drive and each record can contain up to 200 fields. You can also link any standard letter to your database, and it takes just a few seconds to select the records you want merged – even if you only need to send one standard letter to one addressee.

In spite of its short feature list, *Fine Words* is functional and has a perfectly respectable spelling-checker and thesaurus. Headers, footers, and page numbers are supported – but don't expect to find endnotes.

The graphic import feature is useful if you want to get some illustrations into a report or thesis. Although *Fine Words* can import a wide variety of graphics formats, you can't move these vertically once they're positioned on the page or wrap your text around them. If you just want a competent word processor with no frills, one that's dead easy to learn, then *Fine Words* does the job.

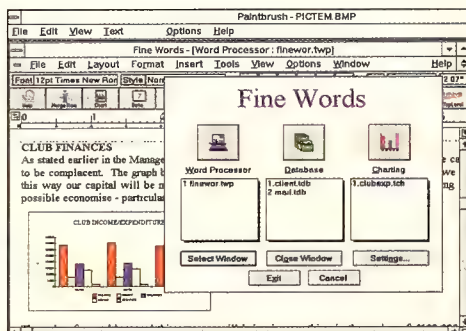
Contact: Toplevel Computing Ltd

Tel: 01453 753955

Price: £29.99

Recommended Hardware: 386SX, Windows 3.0 or higher, 2Mb RAM

PC Answers Rating: 88%



◆ Click on the last icon on the button bar and up pops this button box. From here you can jump to any open file in any of the three applications. Notice the chart – this was created by the charting application

◆ In this tiled view, all three applications have open documents. Notice how the button bar changes according to which application is active

Microsoft Word 6.0

RECOMMENDED
PC ANSWERS

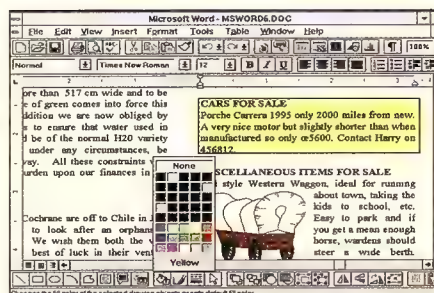
Word for Windows is the most popular, and arguably one of the most powerful, Windows word processors you can buy. It has big, chunky, easy to read buttons and toolbar icons that remain clear even at high screen resolutions. *Word* is particularly strong on styles, templates, and macros; by combining these, you can create very complex custom applications.

In the word processor stakes, *Word* has all the usual features but these are much more sophisticated and functional than those found in most of the competition. For example, tables can be created easily and data entry is done in the document after the table has been inserted.

Graphics control and manipulation, charting, drawing, and desktop publishing facilities, while streets behind *WordPerfect 6.1*, are excellent. The test document took about an

hour to create – without reading the documentation. To access on-line help just drag the Help icon to a button or toolbar icon and click. Brilliant.

Word's TextArt feature – which you use to add special



◆ The Word editing screen in Page Mode showing the drawing tools at the bottom. Here, a rectangle has been drawn to highlight a chunk of text.

effects to text – is as good, if not better, than *WordPerfect's*, and you can use this to create stunning effects in your documents. For instance, you can have text in circles, arcs, and other rotated, shaded, and coloured shapes.

Mail merge is, of course, supported and – as with *Word's* many other features – is just so easy to use it's almost automated. You can mastermind a complex, conditional merge operation in no time at all – even if you've never used mail merge before.

Although it's aimed primarily at the office user, *Word 6.0 for Windows* is an intelligent

choice if you need a word processor that will do everything you want to do today – and everything you might want to do tomorrow – to a very high standard and in minutes. OK, it is slightly pricier than most word processors, but then, you get what you pay for.

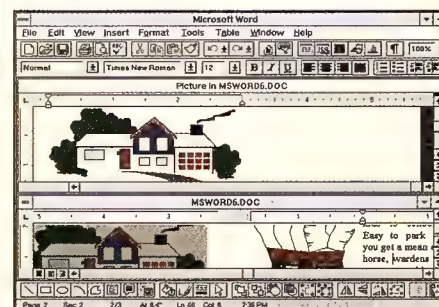
Supplier: Microsoft Limited (UK)

Tel: 0345 00 2000

Price £284

Recommended Hardware: 386DX, Windows 3.1 or higher, 6Mb RAM

PC Answers Rating: 87%



◆ *Word's* Draw module uses OLE 2 so you can edit an image without leaving the document... clever, that

Integrated packages versus suites

All budget, integrated packages include a word processor, database and spreadsheet module. Microsoft *Works* and PFS *First Choice* are two such programs. Usually, the word processor is the strongest of the modules, but, where the company

has a professional word processor, some features are always left out. For example, you don't get macros.

A suite, on the other hand, is a group of standalone applications integrated and linked in such a way that switching between, and

exchanging data with, the separate applications is relatively easy. That said, some suites are far more tightly integrated than others.

PerfectOffice 3.0 and *MS Office 3.0* are the best of the suites and actually cost little more than the

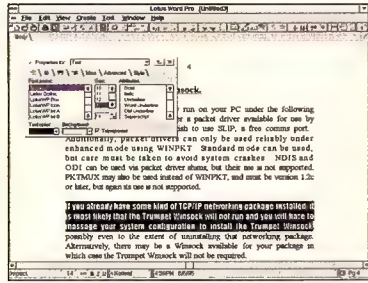
standalone word processors included in them. A suite can be a good buy if you're likely to need the other components. On the downside, though, a suite can take well over 60Mb of disk space and require 12Mb or more to run efficiently.

WordPro

RECOMMENDED
PC ANSWERS

There used to be a professional quality word processor called Lotus Ami, which was pretty good. In its latest guise Lotus has chosen to call it *WordPro*, perhaps because too few people bought *Ami*. So instead of *Ami 4.0*, we now have *WordPro*, and it's even better.

Among its more interesting features are SmartSense, which is a handy, context sensitive auto correction feature, and, even wilder, it now comes with



◆ One of WordPro's attractive

features is the Properties dialog box. From here you can alter most aspects of text and page formatting with everything applied as you select it

◆ WordPro's page layout features enable you to create complex pages using frames. These can be moved and resized using just the mouse



features you probably won't have any use for but can boast about.

It's possible to have so many icon bars on screen that you can't work – each an easy to misunderstand picture with no context. Fortunately, a little explanatory word pops up if you position the cursor over an icon.

WordPro's big new thing is Team Editing, used to maintain and track multiple versions of a document on which several people can work at once, but it's probably of little use at home.

Graphics are easy. Pop them into a frame, which you can drag around and resize. You can't, though, flow text between two frames. It also has a good collection of drawing tools.

WordPro supports document templates in the form of SmartMasters, much like Microsoft Wizards, that take you through the construction of a range of useful document types. All in all, it's up there with *Word* and *WordPerfect* when it comes to long feature lists.

Supplier: Lotus

Tel: 01784 445808

Price: TBA

Recommended hardware: 386,
6Mb RAM, Windows 3.1

PC Answers Rating: 85%

CA-Texttor 6.0

In spite of its version 6.0 tag, not to mention the high price, everything about *CA-Texttor* is low-end and, in Windows terms, old-fashioned. The menu system is remarkably non-intuitive and features odd menus. For instance, who would think of looking in the Window menu for the headers and footers, or in the Search menu for the thesaurus?

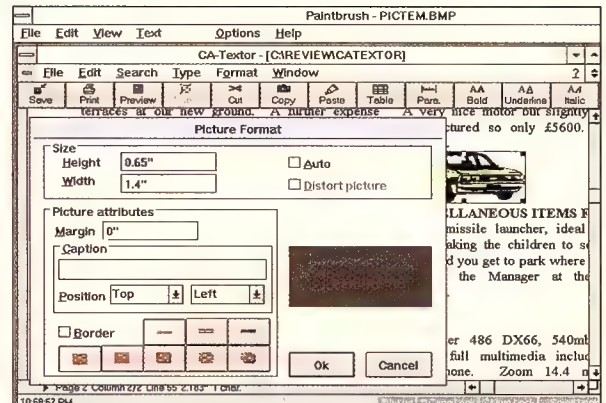
The terminology, too, can throw you a bit – fonts are called typefaces and a DOS file is any file not in a *CA-Texttor* library. Headers, footers, and page numbering are absolutely essential for multi-page documents, but in *CA-Texttor* you're limited to one header and one footer per document and there's no option to print them on alternate pages, or odd or even pages only. Inserting a page-numbered header or footer into a document is long-winded and can involve up to 16 separate mouse operations.

CA-Texttor has good conditional mail merging facilities and its mail merge feature can use *dBASE* and comma separated files, but there's no built-in datafile creation feature.

Once you get the hang of it, and this can take quite a while, you can include calculations in your form letters using formulae and spreadsheet-style functions. Tables are supported but the process of creating one and entering data into cells is rather clumsy. Once a table has been inserted, the only way you can move it is to stick it into the clipboard, reposition the cursor, then paste it back in.

Similarly, while you can insert a graphic and size it, there's no way of moving it around other than cutting and pasting. Likewise, there's no way of wrapping text around graphics. And, strangely enough, an embedded graphic will disappear from a document if the source of the graphic, a CD-ROM, for example, is removed – but at least *CA-Texttor* displays an error message to say that it can't find the graphic. So, that's all right then.

The documentation isn't brilliant and this, coupled with a cumbersome interface, makes *CA-Texttor* a very poor choice indeed – your money can be much better spent elsewhere.



◆ A graphic can be sized, given borders, and positioned within its frame – but that's about all

Supplier: Computer Associates

Tel: 01753 577733

Price: £233.82

Recommended Hardware: 286,
Windows 2.0 or higher, 512k RAM

PC Answers Rating: 55%

So what does it all mean, then?

WordPerfect 6.1 and *Microsoft Word 6.0* are, at the moment, leaders of the Windows word processing market. They both offer the very best in word processing and are excellent value for money. *Fine Words* is a super little package and worth buying if you don't need too many frills.

Word Express is shareware, but don't pass it by; in its class, it's probably the most powerful, value for money, Windows word processor you can find. At the Shareware Industry Conference in June '95 it won two awards: Best Shareware Word Processor and Best Overall Program.

CA-Texttor is disappointing and, despite numerous telephone calls and faxes, we couldn't get any answers for the problems we found when trying to use it. *WordStar* gave a good account of itself and is certainly worth considering, particularly if your needs lean more towards desktop publishing than day-to-day wordprocessing – and you can buy it out of the petty cash.

The two best buys are *Word Express* for modest needs and *WordPerfect 6.1* if you need the maximum of raw power. Don't forget, though, if you're planning to upgrade to Windows 95, look at the upgrade options before putting hand in pocket.

PC ANSWERS

SHIFT
KEY

On the CD-ROM

Wordstar for Windows
Brand new, world exclusive demo
enabling you to create, save and
print your own documents

Fine Words for Windows

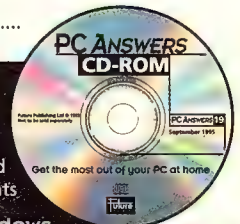
Use this demo to test out all the functions of
the real thing. Available for 50 hours

Word Express

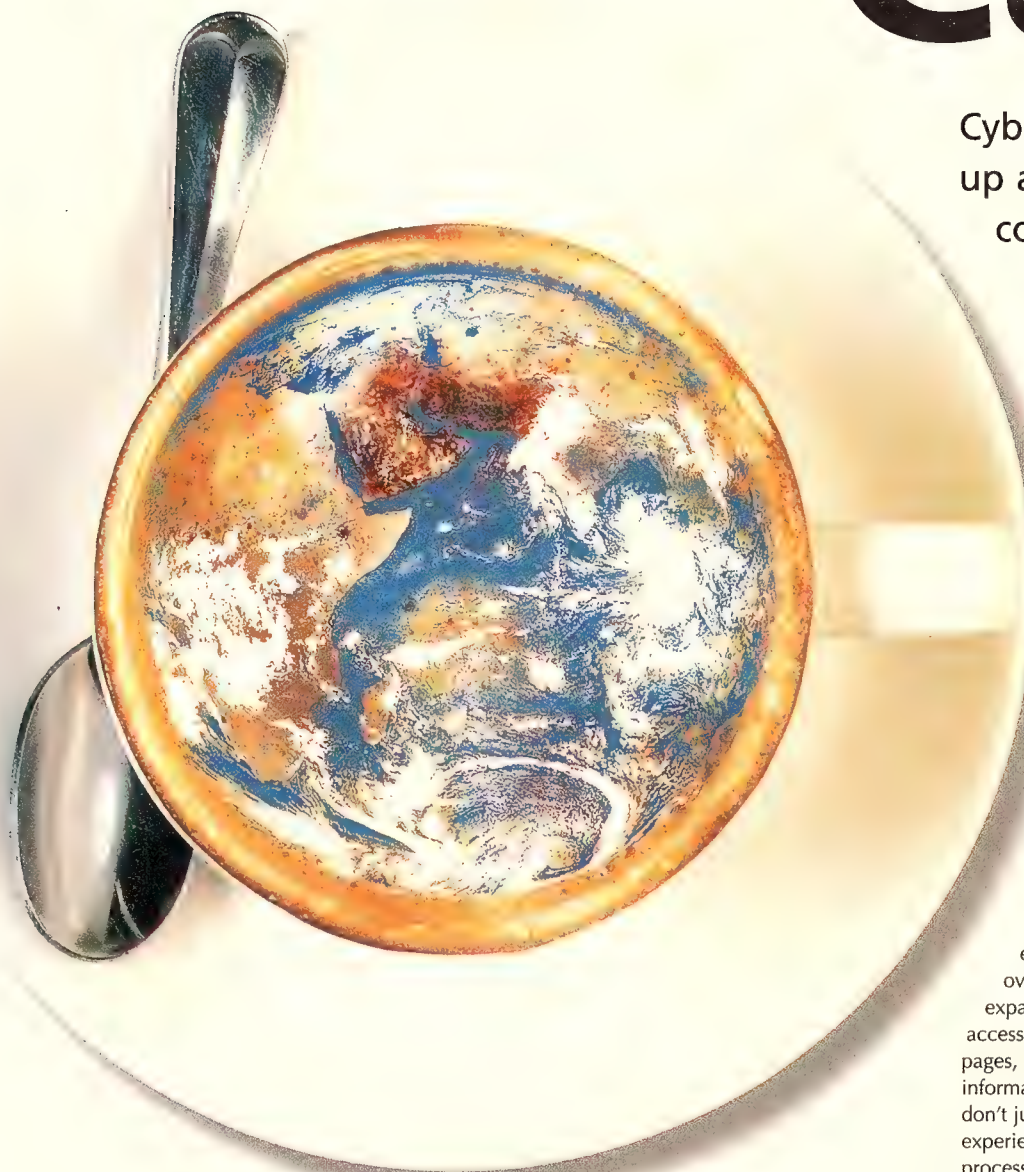
Fully functioning shareware word processor.
Then, if you like it, register for the full version

Test document

Saved in WordStar 2.0 format



The New Café



Cybercafés are popping up all over the place, but could you set one up?

Where would you start? How much would it cost?

Steve Bough reports

Net wannabees know the cybercafé is the hip place to be in the on-line '90s.

Here you can fool with modems while socialising – dispelling at last the myth that all Net users are socially-challenged anoraks.

In a cybercafé you can browse the Internet with experienced users and newcomers. For around just £4 an hour, you have access to a PC connected to the world, enabling you to discover over six thousand newsgroups and the ever expanding World Wide Web. Cybercafé access enables you to create your own Web pages, receive e-mail messages, download information and print stuff out. These venues don't just offer a novel take on the cappuccino experience, but are a vital part of the learning process in the digital revolution.

Internet cafés are still a relatively new concept, but following the huge success of

The place to be...

Here's just a few of our most favourite cybercafé homepages. Try them for yourself

- 1 Cyberia, London, UK at <http://www.easynet.co.uk/pages/cafe/cafe.htm>
- 2 Bytes, Belfast, N.Ireland, UK at http://www.easynet.co.uk/pages/cafe/ccafe_uk.htm##bytes
- 3 Cyberia, Kingston-on-Thames, UK at <http://www.easynet.co.uk/cafes/kingston/cybking.htm>
- 4 Peak Art Cybercafé Stockport, UK at <http://www.cityscape.co.uk/users/do77/index.htm>
- 5 Cyberia, Edinburgh, Scotland, UK at http://www.easynet.co.uk/pages/cafe/ccafe_uk.htm##edinburgh_cyberia
- 6 WEB13, Edinburgh, Scotland, UK at <http://www.presence.co.uk/>
- 7 The Six Bells, Cambridge, UK at <http://www.cityscape.co.uk/sixbells/>
- 8 Wet, Manchester, UK at http://www.easynet.co.uk/pages/cafe/ccafe_uk.htm##wet
- 9 Zap Cybercafé, Brighton, UK at <http://www.pavilion.co.uk/CyberSouk/access/cafe/>
- 10 The Hub InterCafé, Bath, UK at <http://www.hub.co.uk/intercafe/>

◆ Staff at the Hub InterCafé hope to encourage visitors to the café to be as creative as possible – there's even going to be a virtual art gallery

Society



London's Cyberia – find the address of its homepage in the boxout below – more are springing up in both the UK and mainland Europe. Getting started in the business may not be as difficult as you'd think.

The Hub InterCafé is the latest to open up, in the Georgian city of Bath, home to Roman swimming pools, FutureNet and PC Answers. We went along to the launch and quizzed Ian Wood, the proprietor; Johanna Nicholls, maître d'; and Charlie Dancey, technical support. Ian Wood commented: 'The Hub

InterCafé isn't just going to be another cybercafé. We aim to push it as a local centre for digital development. The world is our oyster'.

Snap decision

Of course, opening a cybercafé requires money, staff, computers and premises, all of which Wood already had. His enthusiasm for establishing a West country cybercafé grew out of a chance visit to the home of Charlie Dancey to try out the Internet for himself. It all seemed to happen remarkably quickly, as Dancey described: 'Ian turned up at my house one evening, spent



"We aim to push the Hub InterCafé as a local centre for digital development"

Ian Wood
Proprietor

three hours browsing the Net and decided there and then to open an internet café. He had the ideal premises behind The Bell pub in Bath. Within two days, the roof was taken off and put back on, all the junk was simply thrown out, and the computers brought in. It seemed all too easy'.

Wood already runs two public houses and a nightclub in Bath, so the business aspects of opening and running a going concern wasn't exactly daunting. At The Bell, the necessary preparations – installing the right equipment and recruiting appropriate staff – went ahead. Within just two months the region had its first Internet café.

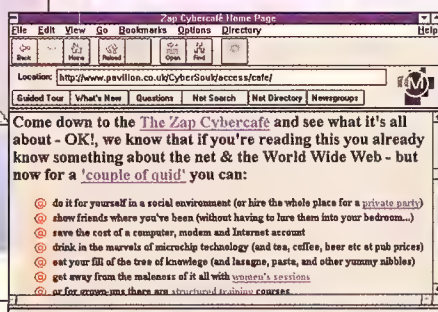
Johanna Nicholls, the maître d' of the Hub InterCafé, describes her main role as assisting and introducing new users to the Internet. She'd already set up an on-line nightclub in Bristol, so Dancey approached her and explained that what they needed was somebody who not only could run a café, but who also had an extensive knowledge of the Net. She was ideal. Nichols on her involvement with the Hub café:

'I know that we're going to get people in the café with no knowledge of the Net. It's my job to make newcomers feel more at ease and confident using this initially quite daunting medium. I help them with step-by-step tuition'.

Dancey is the technical director of the Hub InterCafé. A close associate of Wood for many years, he has a background in programming and plays the resident expert role, giving technical support to the café's computers and connections (he's also a renowned juggler, has written a book on the subject and can be seen performing at weekends in Bath's city centre!). His enthusiasm about the project comes across in his excited delivery: 'The Internet opens vast opportunities for



Web 13
The Internet Cafe



◆ Cybercafés are springing up all over the British Isles, and there's probably one very close to you. We've printed a list opposite and mentioned a few of the best, but new ones come along all the time





"We're here to offer a unique service which is open to absolutely everyone"

**Charlie Dancy
Technical support**

everyone. The idea with the Hub InterCafé is not to stand still. We're here to offer a unique service which is open to absolutely everyone'.

Nichols makes the point that the Hub InterCafé is not a done deed, it's only just begun. She intends to run workshops for children, and help launch a virtual art gallery. Here you can have your own artwork scanned in and shown worldwide for a 24 hour period. A DTP service and workshop will soon follow. Plus that all-important atmosphere, as she explains, 'We'll encourage everyone to have a go at the Net, all within a relaxing environment. You can bring in your drinks from the pub and smoke. It'll be a hassle-free café'.

The most expensive item in establishing a café is leasing a line, the direct connection to the Internet. The Hub leases from RedNet and it costs it about £2,000 upfront for one year. Then there are staff wages, extra computers, and the overheads involved in running any business. Get someone to run it, the essential technical support and the premises, and you're there. Ian Wood is not a Net expert, he's a businessman. So how's he actually going to make money of the back of his latest venture?

'The way I envisage the Net is that it's another step forward in the many avenues of communication. We don't expect to make that

And now for those technical bits...

The Hub InterCafé uses a 64K – 64 Kilobytes per second – line and Rednet as its service provider. Part of the attraction of a cybercafé is the speed of service – you can download files 12 times quicker than if you were using your average 14,400 modem. If it takes you 30 minutes at home, you can reckon on two to three minutes at the Hub.

Ian Wood already owned three Apple Macs before launching the café, so it made sense to invest in further

machines. He'd bought Apple Macs for designing flyers for the Hub nightclub, and, as far as price was concerned, there wasn't that much difference. Charlie Dancy had this to say on future investments:

'At the moment, Apple Macs can do some things that PCs can't, and vice versa. However, we do recognise the versatility of PCs and fully intend to get some for the café. The next few terminals that we'll be getting will be PCs'.

much initial profit, but by incorporating a design bureau and workshops into the café, it will attract more custom'.

He owns two bars and a nightclub and he's keen to create an additional synergy between his businesses. For example, the Hub nightclub has strong ties with the music industry and it's this association that prompted Wood to incorporate it in the title of the café. The Hub InterCafé is also there to help promote music on the Internet, and promises to encourage digital audio production among its users, with an emphasis on hopefully making this a major feature of the café.

As well as Net browsing, you can hire virtual space, build your own Web pages and leave your calling card on the Net. By using the InterCafé you have all the privileges of a home user – postal rights, use of the printer, and access to download anything you wish, whether it be games, pictures or pages of text.

With countless newcomers to the Net exploring the service every day, netiquette – Net etiquette – is a major concern. Offensive messages left at the café's address could lead to the on-line horror of being flamed. As Nichols remarked, 'We will emphasise that courtesy is of utmost importance'. Experienced Net users are already well aware that it pays to be courteous when browsing and replying to messages or questions – newcomers simply need to adopt the standard conduct.

Restricted access

Another major factor that needs to be taken into consideration is that of child safety on the information superhighway. Youngsters using the service could access and download pornographic software, for example. The café princi-

ple, that you can have anything you want saved to disk, can be compromised on this issue.

With such open access, avoiding illegal use of the café's Internet service could be hard to detect, and even though use is overseen, there are ways around everything. Nicholls points out, 'The café will be supervised'.

An important part of the business is, of course, attracting customers. The Hub InterCafé charges £4 per hour, with concessions for students and the unemployed. Aside from the workshops, DTP training and the virtual art gallery, there will be a digital drawing room with a wide range of easily accessible material available for browsing, from magazines through to technical manuals, fiction or non-fiction. This service should be invaluable for research purposes, or if you just fancy a quick read. Ian Wood envisages great potential for the café: 'The café can become an exhibition of local publishing that people all over the world can see. Let's put Bath on the map'.

Cybercafés may be an integral part of the growth of the Net, but how exactly do they fit into the big picture? Dancy again:

'As far as the Hub InterCafé is concerned, we think it's necessary to involve as many people as possible. The more work that is published, and the more creative the Net becomes, the more it will grow. We hope to encourage everyone to publish their work to contribute and aid it's development'.

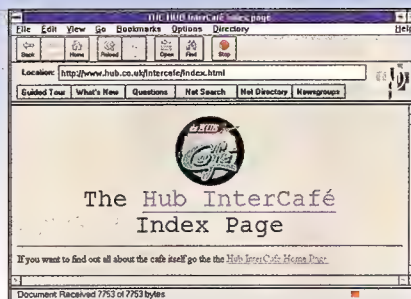
It's still early days, but things are already going extremely well. They've got a good geographical location, an enthusiastic team and have already managed to court plenty of publicity. The Hub InterCafé is already a success, and wasn't nearly as tough to set up as you'd think. The secret of their success is the same as in any modern small business: hard work, entrepreneurial flair and backing. The Internet is the new business frontier. Be there. **PC ANSWERS**

Tell 'em Steve sent you

From FutureNet, you can access the PC Answers homepage. From there, use our special links to get to the Hub café. Simply point and click for maximum information...



Get to FutureNet, which you can find through your bookmarks, or at : <http://www.futurenet.co.uk>. Browse our superb pages until you come across the fantastic PC Answers in the Computing section



Voilà – The Hub InterCafé homepage. Click on this to find out everything about Bath's latest attraction. There's a strong emphasis on arts and music for you to enjoy



"It's my job to make newcomers feel more at ease using this medium"

**Johanna Nichols
Maître d'**





STAR TREK TNG 33.99 COMND & CONQ 31.49 SIMON SORCEROR 2 26.49 FULL THROTTLE 31.49 FLIGHT UNLTD 31.49 1ST ENCOUNTERS 26.99 MS WINDOWS 95 74.99

IMPORTANT - PLEASE NOTE

= New Item
EV = EVGA (Enhanced VGA 256 Colours)
86 = Min machine requirement
MB = Minimum requirement of RAM
S = Deducted amount shown
INLESS STATED MINIMUM SYSTEM 386 WITH VGA AND 2MB

PC CD ROM GAMES

42 - PACIFIC AIR WAR GOLD 4MB 27.49
CES OF THE DEEP 27.49
LONE IN THE DARK 3 EV/486/4MB 28.49
WARD WINNERS 3 CIVILISATION, 23.99
LITE 2, LEMMINGS 23.99
OFORGE 486/8MB 31.99
LOADINGS - JUPKINHEAD REVENGE 486/4MB 33.99
XS BLUETOOTH DEDUCT £3 UNTIL SEPT 30
JZZ ALDRIN'S - RACE INTO SPACE 11.99
CHAMPIONSHIP MANAGER COLLECTION 3/94 + UPDATE DISK 14.99
VIL WAR 4MB 29.49
XS CIVIL - DEDUCT £3 UNTIL AUG 31
CLASSIC COLLECTION - DELPHINE ASHBACK, CRUISE FOR A CORPSE, JOTHER WORLD, OPERATION HEALTH, FUTURE WARS 19.99
OMMAND & CONQUER 486/4MB 31.49
ARK FORCES 486/8MB 34.99
ESERT STRIKE 9.99
SWORD 34.99
DISCOWORLD - DEDUCT £3 UNTIL SEPT 30
COM 2 SV/4MB 32.49
DRAGO'S MADCAP CHASE 4MB 25.99
READNOUGHTS PLUS 25.99
JNE 9.99
SPORTS RUGBY '95 4MB 38.99
SPORTS - DEDUCT £3 UNTIL SEPT 30
RTH SIEGE 28.99
RTH SIEGE DATA DISK 11.99
A INTERNATIONAL SOCCER 24.49
IGHT UNLIMITED SV/486 31.49
ONLINE - FIRST ENCOUNTERS 4MB 26.99
LL THROTTLE 486/4MB 31.49
ZILLIONAIRE 4MB 24.99
S GAZILL - DEDUCT £3 UNTIL SEPT 30
NE FISHING 23.99
DYCANE 486/4MB 35.99
P CAR RACING 9.49
TERPLAY TENTH ANNIVERSARY THOLOGY OUT OF THIS WORLD, STAR TREK - 25TH ANNIVERSARY, STLES, LORD OF THE RINGS, TTLECHES, DRAGON WARS, STELAND, BARO'S TALE, TASS T S, MINDSHADOW 34.99

PC DISK GAMES

IRON HELIX EV 4MB 24.99
JOURNEYMAN PROJECT 2 - BURNED IN TIME SV/486/4MB 32.99
KINCPIN 13.99
KIXX COLLECTION VOL 1
ANIMALS WORLD ATLAS, SPACE ENC'EDIA, W.CUP USA 94, WINTER OLYMPICS, LINKS, THUNDERHAWK, CURSE OF ENCHANTIA, J. POND 2, OUTRUN, PRINT & PAINT, ITS ALL RELATIVE, MICHAEL JACKSON, PHIL COLLINS, MADONNA & JOHNNY CASTAWAY 28.99
LAST DYNASTY 4MB 29.49
LEMMINGS 1 & 2 12.99
LITTLE BIG ADVENTURE 486/4MB 28.99
LOST EDEN 4MB 23.99
MAGIC CARPET 486/4MB 23.99
MARINE FIGHTERS 486 4MB 35.99
MASTER OF ORION 14.99
METAL MARINES 486/8MB 25.99
NBA LIVE '95 4MB 36.99
OVERLORD 9.99
PERFECT PINBALL 13.99
PGA TOUR GOLF 486 486/4MB 31.99
PINBALL MANIA DELUXE 4MB 23.99
PINBALL FANTASIES DELUXE 24.49
PIZZA TYCOON 27.49
XS PIZZA - DEDUCT £3 UNTIL SEPT 30
POLICE QUEST COLLECTION 28.99
POWERDRIVE 22.49
PREMIER MANAGER 3 16.99
PRIVATEER + MISSIONS & SPEECH DATA DISKS EV/4MB 25.99
SENSIBLE GOLF 12.99
SKIDMARSH 20.99
SIM CITY 2000 COLLECTION SV/4MB 33.99
SIM TOWER 8MB 28.49
SLIPSTREAM 5000 486/4MB 23.99
SPACE QUEST 6 28.49
STAR TREK - TNG 486/8MB 33.99
SUB WAR 2050 EV 33.99
SUPER KARTS 486/4MB 25.99
SYNDICATE - DATA DISK EV/4MB 12.99
SYSTEM SHOCK 4MB 27.49
TEMPATION 7TH GUEST, INDY CAR - DATA DISK, HAND OF FAIR, LANDS OF LORE 4MB 31.49
TERMINAL VELOCITY 8MB 30.99
THEME PARK 4MB 27.49
TRANSPORT TYCOON SV/4MB 22.99
UFO - ENEMY UNKNOWN 4MB 22.99
ULTIMATE DOOM SV/486 4MB 21.49
ULTIMATE SOCCER MANAGER 21.99
US NAVY FIGHTERS 486 4MB 31.49
VIRTUAL POOL 30.99
WING CMDR 3 (15) SV/486/8MB 35.49
X-COM (UFO V1) 5 4MB 28.99
X-COM - DEDUCT £3 UNTIL SEPT 30
X-WING COLLECTION X-WING, B-WING, IMPERIAL PURSUIT & 6 NEW LEVELS EV/4MB 29.49

MS WINDOWS 95

ACES OVER EUROPE 17.99
BATTLETECH RPG POWER HITS (BATTLETECH, CRESCENT HAWK'S REVENGE AND MECHWARRIOR) 22.99
CHAMP MANAGER COLLECTION (93/94 + UPDATE DISK) 14.99
DISCOWORLD 486/4MB 27.49
DOOM COLLECTOR'S DATA DISK DOOM 1 D/D VOL1 2.3.4 & EDITOR - DOOM 2 EXTRA LEVELS & EDITOR 19.99
DUNE 2 - BATTLE FOR ARRAKIS 13.99
ELITE PLUS 5.99
EYE OF THE BEHOLDER 3 12.99
FIELDS OF GLORY 13.99
FORMULA 1 GRAND PRIX 14.99
FRONTIER - F.RST ENCOUNTERS 4MB 24.99
INDY JONES FATE OF ATLANTIS ADV 13.99
LEMMINGS 2 9.99
LUCAS ARTS TRIPLE PACK VOL1 X-WING, B-WING, IMPERIAL PURSUIT EV/4MB 23.99
LUCAS ARTS TRIPLE PACK VOL2 INDY - FATE OF ATLANTIS, DAY OF THE TENTACLE, SAM & MAX HIT THE ROAD EV/4MB 29.99
NASCAR 24.49
RIDE OF THE LEAGUE EDITION 12.49
OVERLORD 486 28.99
PINBALL MANIA 20.99
PINBALL SPECIAL EDITION PINBALL FANTASIES & DREAMS 4MB 21.99
PIRATES GOLD 13.99
PIZZA TYCOON 27.49
XS PIZZA - DEDUCT £3 UNTIL SEPT 30
PREMIER MANAGER 2 9.99
PREMIER MANAGER 3 21.49
PREMIER MANAGER 3 EDITOR 12.99
PSYCHO PINBALL 23.99
RETURN TO ZORK 13.99
RISE OF THE TRIAD SV/486/8MB 21.99
SCARABLE 20.99
SECRET OF MONKEY ISLAND 2 12.99
SETTLERS 16.99
SIM CITY 2000 SV/4MB 23.49
SIM CITY 2000 URBAN RENEWAL KIT 14.99
SIMON THE SORCEROR EV 14.99
SPACE HULK 12.99
SPEEDBALL 1 & 2 8.99
THE FIGHTER 486 4MB 25.49
THE FIGHTER 486 4MB 27.49
TRANSPORT TYCOON SV/4MB 22.99
ULTIMATE DOOM SV/486/4MB 21.49
ULTIMATE SOCCER MANAGER 21.99
WORLD CUP YEAR 94 GOAL CHAMPIONSHIP MANAGER 94 + D/D, STRIKER, SENSIBLE SOCCER 15.49
X-COM (UFO V1) 5 4MB 28.99

PC CD ROM UTILITY

COMPLETE WINDOWS SET 14.99
DORLING KINGERSLEY DK EYEWITNESS ENCYCLOPEDIA OF SCIENCE EV/4MB 41.99
DK MY FIRST HOUSE/SESTLY 3D AMAZING DICTIONARY EV/4MB 29.99
DK THE WAY THINGS WORK 41.99
DK ULTIMATE HUMAN BODY EV/4MB 41.99
GHOSTS EV/486 27.49
KLIK AND PLAY ENHANCED 4MB 29.99
MAGIC EYE 4MB 19.99
MICROSOFT MS ART GALLERY 4MB 37.99
MS CINEMANIA 95 4MB 37.99
MS FINE ARTIST 4MB 33.99
MS CREATIVE WRITER 4MB 33.99
MS ENCARTA 95 4MB 69.99
POWER UTILITIES 4MB 14.99
PRINCE - INTERACTIVE EV/486/4MB 34.99
SPECCY SENSATIONS 18.99
UFO EV 35.99
WARPLANES EV 4MB 36.99
BBC GARDENERS WORLD 3D GARDEN DESIGNER 16.99
DOOM 2 SCREENSAVER FOR WINDOWS 4MB 16.99
GRANDPRIX TV HOUSE/SESTLY 3D INTERIOR DESIGNER FOR DOS 17.99
JUST LOTTO 16.99
KLIK AND PLAY FOR WINDOWS 4MB 27.99
LOTUS BUNDLE FOR WINDOWS 39.99
MS DOS 6.22 UPGRADE 49.99
MS FINE ARTIST FOR WINDOWS 4MB 34.99
MS MONEY FOR WINDOWS 37.99
MS WINDOWS 3.11 COMPLETE 4MB 85.99
MS WINDOWS 3.11 UPGRADE 4MB 54.99
MS WORKS 3.1 FOR WINDOWS 4MB 114.99
PRESSWORKS 2 FOR WINDOWS 28.99
QEMM 7.75 WIN3 1/4MB 67.99
SIMPLY BUSINESS (CA) FOR WINDOWS 59.99
TIGER TRAIL TNG SCREENSAVERS FOR WINDOWS 26.99

MONTHLY 48-PAGE COLOUR CLUB MAGAZINE
CREATS & MOVES
RELEASE SCHEDULE
CHARTS
REVIEWS
HUGE RANGE
ALL GENUINE
UK PRODUCTS
HEAVY DISCOUNTS
XS SAVERS
BONUSES
WIN A SONY PLAYSTATION

Membership Card Sales: 01279 600204
Special Reserve
The Ultimate Club
10am to 8pm 7 days a week!
01279 600204
Or Fax 01279 726842 - we'll confirm receipt
Members only but you can order as you join.
Annual UK Membership £7
Includes 12 issues of the club magazine with £180 worth of XS Savers.



Over 250,000 people have joined Special Reserve and we are the largest computer games club in the world. We also have two very impressive club shops which stock our entire range.

SPECIAL RESERVE CLUB SHOPS

10am 'til 8pm 7 DAYS A WEEK!
CHELMSFORD, ESSEX
43 Broadfield Road. Just around the corner from the bus station.
SAWBRIDGEWORTH, HERTS
The Mailings, Station Road. A few miles from the M11, near the train station. Items bought in the shops carry a 50p surcharge on the Mail Order prices.

UNLESS STATED ALL PRICES INCLUDE VAT & DELIVERY

GENUINE SOUND BLASTER PRO SOUND IDE CARD WORTH £150
GENUINE CREATIVE QUAD SPEED IDE CD ROM DRIVE
GENUINE SAMSUNG 14" SVGA 0.28 MONITOR + TILT AND SWIVEL
GENUINE SAMSUNG HIGH SPEED 560 MB HARD DRIVE + SPARE IDE
GENUINE MICROSOFT SOFTWARE BUNDLE WORTH OVER £500
AND EIGHT GREAT CLASSIC GAMES FREE

TRUST QUAD MULTIMEDIA PC EX VAT
DX4/100 + 4MB RAM 1199.99 ...1021.27
DX4/100 + 8MB RAM 1324.99 ...1127.65
DX4/100 + 16MB RAM 1499.99 ...1276.59



WITH ALL THIS AND FREE TWO YEAR ON-SITE WARRANTY
PRICES AND SPECIFICATION SUBJECT TO CHANGE

WE ONLY SUPPLY MEMBERS BUT YOU CAN ORDER AS YOU JOIN

MEMBERSHIP FEES	UK	EC	WORLD
ONE YEAR (12 ISSUES)	£7.00	£9.00	£11.00
SIX MONTHS (6 ISSUES)	£4.00	£6.00	£7.00

Each issue includes £15 of new XS Savers. Members are under no obligation. All prices include VAT and carriage to MOST UK mainland addresses.

Overseas orders must be paid by credit card
Hardware items (battery or mains) are only supplied to the UK mainland
Overseas surcharge £2.00 per software item or 25% on other items

(BLOCK CAPITALS please)
Name & Address _____
Postcode _____
If Mac or PC please state DISK or CD ROM _____

Phone No _____ Machine _____
Enter membership number (if applicable) or
NEW MEMBERSHIP FEE (ANNUAL UK 7.00)

Item _____
Item _____
Item _____
Please use this box to add any optional fast delivery charge
1st Class Post 50p per posted item or £10 hardware

ALL PRICES INCLUDE UK POSTAGE & VAT
Cheque/P.O./Access/Mastercard/Switch/Visa £ _____

CREDIT CARD _____ SWITCH _____
EXPIRY DATE _____ SIGNATURE _____ (ISSUE NO) _____

Mail Order address. Cheques payable to:
SPECIAL RESERVE
P.O. BOX 847, HARLOW, CM21 9PH

or FAX a credit card order on 01279 726842 - and we'll FAX back.

Inevitably some games listed may not yet be available. Please phone to check availability.
Prices may change without prior notification. Time of going to press 11.07.95 E & O.E.
SAVE = Saving off full retail price. Inter-Mediate Ltd, The Mailings, Sawbridge, Herts.

MULTIMEDIA & CD ROM

CREATIVE LABS QUAD MULTIMEDIA UPGRADE KIT 349.99
INCLUDES CREATIVE LABS QUAD SPEED IDE CD ROM DRIVE, GENUINE SOUND BLASTER 16 PRO SPEAKER SOUND CARD, CREATIVE ACTIVE SPEAKERS, MICROPHONE, SPEECH RECOGNITION PLUS ALL THIS SOFTWARE

TRUST EXPERT 16 SOUND CARD 59.99
16 BIT STEREO, 20 VOICES, 4 CD ROM INTERFACES (PANASONIC, SONY, MITSUMI AND IDE) SOUND BLASTER PRO 2 COMPATIBLE WITH SOFTWARE

SOUND BLASTER 16 PRO ASP IDE 89.99
16 BIT STEREO, 20 VOICES, MIDI INTERFACE, BUILT IN 4 WATT AMPLIFIER, IDE INTERFACE, MC1000 MICROPHONE, ADVANCED SIGNAL PROCESSING AND EXTENSIVE SOFTWARE INCLUDING VOICE RECOGNITION

MICROPHONES

SOUND BLASTER CREATIVE MICROPHONE MC1000 12.99
MULTIMEDIA HEADSET 12.99
MICROPHONES ARE IDEAL TO CONNECT TO SOUND CARDS FOR USE WITH SAMPLING AND VOICE RECOGNITION SOFTWARE

SPEAKERS

ZYDEC ZY-FI PRO 2 SPEAKERS 46.99
36 WATTS (120W PEAK) WITH BASS, TREBLE AND VOLUME CONTROLS

SCREENBEAT 3 STEREO SPEAKERS 14.99
4 WATTS WITH BASS AND VOLUME CONTROLS. FREE MONITOR HANGERS

QUICKSHOT SOUNDSTOR 42.99
10 WATT SPEAKER CONSOLE

REACTIVE LABS 563 QUAD SPEED CD ROM 109.99
CONNECTS DIRECTLY TO MOST SOUND BLASTER SOUND CARDS WITH BUILT-IN PANASONIC INTERFACE OR VIA CARD (AVAILABLE SEPARATELY)

INTERFACE CARD OR CREATIVE LABS CD ROM DRIVE 14.99
EC QUAD SPEED CD ROM 145.99
CONNECTS DIRECTLY IN TO IDE HARD DRIVE CONTROLLER CARD OR TO EIDE CARD

FINANCED IDE CONTROLLER CARD 22.99

QUICKSHOT 123 WARRIOR 5 JOYSTICK 11.99
PC OPTIX JOYSTICK OPTICAL, ANALOGUE/DIGITAL SWITCHABLE 27.99
HRUSTMASTER LIGHT CONTROL JOYSTICK ANALOGUE 74.99
QUICKSHOT 201 SUPER WARRIOR 5 JOYSTICK ANALOGUE, AUTOFIRE 14.99
SAITEK MEGAGRIP 7 DIGITAL 11.99

PHASE 8 PHANTOM 2+ JOYPAD 16.99
ZENIX DIGITAL HIGH QUALITY MOUSE 10.99
MICROSOFT HOME MOUSE WITH CONTROL SOFTWARE AND 18 MS TITLES 26.99
EKLIPSE MOUSE AND FREE MOUSE MAT 10.99
STAR TREK TNG VERY HIGH QUALITY TWO CAPTAINS 9.99
TNG CREW 9.99
MOUSE MAT SPONGE BACKING 4.99

SAITEK MEGAGRIP 8 JOYSTICK ANALOGUE, AUTOFIRE 15.99

SAITEK MEGAGRIP 3 JOYSTICK WITH AUTOFIRE 12.99

QUICKSHOT 123 WARRIOR 5 JOYSTICK 11.99

QUICKSHOT 201 SUPER WARRIOR 5 JOYSTICK ANALOGUE, AUTOFIRE 14.99

SAITEK MEGAGRIP 7 DIGITAL 11.99

SAITEK MEGAGRIP 8 JOYSTICK ANALOGUE, AUTOFIRE 15.99

SAITEK MEGAGRIP 3 JOYSTICK WITH AUTOFIRE 12.99

QUICKSHOT 123 WARRIOR 5 JOYSTICK 11.99

QUICKSHOT 201 SUPER WARRIOR 5 JOYSTICK ANALOGUE, AUTOFIRE 14.99

SAITEK MEGAGRIP 7 DIGITAL 11.99

BLANK DISKS

ALL DISKS ARE SUPPLIED WITH LABELS
3.5" DOUBLE DENSITY DISKS
10 TDK MF-2DD DISKS 7.99
50 TDK MF-2DD DISKS 22.99

3.5" HIGH DENSITY DISKS
10 SPECIAL RESERVE HD DISKS + CASE 7.99
10 TDK MF-2HD DISKS 9.99
50 SPECIAL RESERVE HDISKS 23.99
50 TDK MF-2HD DISKS 27.99

HARD DRIVES PRICES INC VAT
SAMSUNG 420 MB HARD DRIVE 119.99
SAMSUNG 560 MB HARD DRIVE 139.99
VERY HIGH SPEED 3.5" DRIVES, 1" HIGH, 13 MS ACCESS TIME GIVING A TRANSFER RATE OF APPROX 1.5 MB PER SECOND 128K CACHE, 1 YEAR WARRANTY

RAM UPGRADES PRICES INC VAT
4 MB RAM 72 PIN SIMM 124.99
8 MB RAM 72 PIN SIMM 249.99
16 MB RAM 72 PIN SIMM 394.99
32 BIT, 70 NS ACCESS TIME, SUITABLE FOR MOST 486 AND PENTIUM PC's

INTEL CPU UPGRADES PRICES INC VAT
INTEL 486 DX2/66 CPU CHIP 124.99
INTEL 486 DX4/100 CPU CHIP 194.99
INTEL PENTIUM OVERDRIVE 63MHZ CPU 279.99
INTEL UPGRADE CHIPS FOR 486 MOTHERBOARDS (PLEASE CHECK MANUAL TO ENSURE COMPATIBILITY)

PRINTERS PRICES INC VAT
PANASONIC KXP2135 COLOUR 169.99
CITIZEN ABC COLOUR 144.99
CANON BJ-30 PORTABLE BUBBLEJET 199.99
CANON BJC-4000 COLOUR BUBBLEJET 304.99
FULL RANGE OF RIBBONS, TONERS AND LEADS AVAILABLE. CALL SALES FOR DETAILS

FAX MODEMS PRICES INC VAT
INTERNAL 14400 FAX/MODEM 89.99
EXTERNAL 14400 FAX/MODEM 99.99
BT APPROVED, MNP 5V 42 BIS DATA COMPRESSION GIVING UP TO 57,600 BPS. HAYES, G3 AND CLASS 2 FAX COMPATIBLE. INCLUDES CABLES, SOFTWARE AND FREE INTERNET STARTER GUIDE

SCANNERS PRICES INC VAT
TRUST AMI SCAN GREY HAND SCANNER 44.99
UP TO 400 DPI TWAIN COMPATIBLE
TRUST COLOUR FLATBED SCANNER 349.99
UP TO 1200 DPI, 24 BIT, EXTENSIVE SOFTWARE INCLUDING OCR AND EDITING

PC LEADS PRICES INC VAT
JOYSTICK EXTENDER CABLE (15 PIN) 9.99
JOYSTICK SPLITTER (15 PIN) 10.99
ALLOWS TWO JOYSTICKS TO BE CONNECTED TO ONE PORT



A new editor for PC Answers. James Binns ploughs through this month's mail bag.

Paula Richards did a brilliant job of editing *PC Answers*, making it the hugely successful magazine you're reading now, and – as is the way at Future – she's been rewarded with a more difficult job, known here as 'an opportunity to excel'.

Your new editor is me, James Binns, late of *PC Format*, and though you can call me whatever you like when you write in, I don't answer to Jamie as a result of a minor childhood trauma.

My background is in lifestyle magazines, newspapers and broadcast television. In the computer press business I started out humble, on a Nintendo mag, but rapidly transferred to PCs, starting on sister title *PC Format*. I'm extremely proud to come over to edit *PC Answers*.

The *PC Answers* readership continues to grow, and with the hottest team of experts and the most in-depth news and features of all the PC magazines, we will continue to bring you the best PC magazine you can buy.

Over the next few months we'll be sharpening up our act further, but the thing is we can't do it all by ourselves, we need to know what you think.

This is your magazine and you can contribute. Write or e-mail and let me know what you think of the magazine and the topics we raise. You never know, you might see your name in print – you could even win our £50 star letter award, starting next month. Get writing and get the magazine you want.

LETTERS

Just a fad?

With regards to your 'Controlling the Net' article – *PC Answers* issue 17 (July) – I think it unlikely that much control will occur in this country for some time to come. I believe that the current upsurge in Net usage will level off soon, and then go down quite rapidly. A lot of people 'play' with the Net, think it's great, and then get bored with it. Those who continue their Net practices will be the people who have been using it for a long time, and who would have used it anyway – without all the hype over the last year or so.

Also, you mentioned that 80 per cent of those questioned in an EU survey thought that the Net should be regulated. I would expect that many of that 80 per cent are those very people mentioned above – they will eventually stop using the Net or at least reduce their usage to just e-mail.

Andrew Barker, via the Internet

James Binns replies:

Beg to differ. The growth of all areas of comms, World Wide Web, CompuServe, e-mail and even BBSs is fundamentally changing the nature of communication. As an educational and entertainment resource, it has now become invaluable, a fact that suggests it really is here to stay. Sure, the novelty may wear off, but only when it becomes as commonplace in our daily lives as television.

In defence of Windows 95

Having just read your July issue, I feel compelled to write in. Steve Patient's File Open column really is a load of old twaddle. Yes, there are still 64K heaps in use in Windows 95, but most of the stuff that inhabits the USER heap in Windows 3.1 has been shuffled out into 32-bit space – only the handles are stored in the 64K heap. So unless you have around 10K windows or controls on-screen, you won't run out of USER space. The GDI heap has also had the memory consuming Regions moved into 32-bit space,

but a lot of the other stuff still remains 16-bit.

The proof of the pudding is in the eating. I have been running Windows 95 since the first Beta release. I think it's brilliant. There is no problem running multiple 32-bit apps; I regularly have *Word 6*, *Visual C++*, *Smalltalk* and *Exchange* loaded simultaneously without problems.

In addition, the Windows 95 user interface is a dream, the multi-tasking – for 32-bit apps – is good, and the system comes with so much stuff thrown in for 'free' that I can't see how anyone can legitimately complain.

Just in case you think I'm affiliated with Microsoft, let me say that MS has rarely done anything innovative. Nearly all their success is down to taking other's ideas and – these days at least – producing a professional product.

Their only real invention, OLE, is a complete abomination and will, I think, need to be completely rethought before anything like Cairo can be come a reality.
Darren Standen, via e-mail

Steve Patient replies:

Thanks for your long and well argued e-mail, which we've had to shorten for publication. I, too, have been running Windows 95 since the first beta. My complaints were true at the time and simple to demonstrate, though the problem has since been 'fixed'. That's the trouble with writing about a moving target – I'm running build 490 as I write, but it may well be production code by the time you read this.

Windows 95 is a brilliant tour de force which will sell millions of copies and I will be among those using it, but let's not pretend that an operating system carrying so much historical baggage can be as good as it would be if it only travelled lighter.

Head Case

Following the chance purchase of your April 95 issue – my first purchase of a PC mag. Lo and behold, and all thanks to your hardware experts section, my CD-ROM started playing audio music; I nearly fell off my chair.

The articles on the Internet encouraged me to buy an internal 28,800 modem. This refused to obey its own switch settings and my only recourse was to disable Com 2 IRQ 3 on my I/O card. Alas, I had lost the instructions with all those really useful bits on jumper settings. Many interesting hours were spent playing Russian roulette with jumper switches until the desired result was finally achieved. The next day I found the I/O instructions. Now my desk has a dent in it and my forehead is flatter. Well, it's about time I asked the

arbitrary question.

How do you repair a cranium-dented desk?
Gordon Pikes, Perth, Australia, via e-mail

“Well, it's about time I asked the arbitrary question. How do you repair a cranium-dented desk?”

James Binns replies:

Glad you found something useful in the mag. I'm just surprised that you persevered so long without

hunting down some documentation or pestering the manufacturer. As for your desk, I suggest you buy a new one.

Wot, no modem?

I'm one of the 60 per cent or so of your readers who doesn't own a modem, and I'm getting tired of reading about the Internet. Can we please get back to writing about PCs and PC software?

Andrew Hughes, Cheam

No, connecting PCs together is the single most important thing happening in the PC world. It will change the way PCs are used more dramatically than any hardware or software upgrade.

COMPUTER ART REVISITED

Last month's special investigation has raked up a wheelbarrow full of controversy. James Binns answers for Wendy Grossman.

Joseph Squier says 'art on the Web isn't about objects, it's about experiences'. But surely that's what all art is based on, anyway. Stuffed shirts auctioning paintings isn't exactly on the cutting edge of cultural endeavour. The stuffed shirt's artistic perception of value is based on the abstraction of market price rather than cultural merit. Any artist worth his salt would claim that they were not concerned with commercial exploitation, but with making statements about experience. Hence Joseph Squier is merely blurring out a truism.

Alan Gotto, Southampton

Well, not exactly. He was referring more to exhibition as opposed to sale via the Internet – works that do not need to be put into a frame to be appreciated, but are designed to be enjoyed as a print out or on a VDU.

Loved the Art on the Net feature, particularly because rather than just focusing on techie fractals and the point and click school of image manipulation, you also paid attention to the classical variety. Imagine my surprise at following your web site suggestions and downloading an image of the Mona Lisa – my new Windows wallpaper. Thanks for a great magazine.

Fiona Puttnam, Bucks

I can't begin to imagine your surprise. Let's not totally dismiss image manipulation artworks, though... I fully believe that Da Vinci, were he alive now, would use computers. I mean here's the guy who gave us the term propeller head (He invented the helicopter donchyaknow) and was obsessed with technology.

Hasn't the net just given post-modern poseurs a new stage to strut their lunacy on? The only reason these people end up creating digitally is that they can't draw fingers. A century ago they'd have been painting landscapes – it's a well known fact that Constable couldn't paint ears. Now they create digital lightscapes.

Tony Redwood, Glasgow

I read somewhere that the definition of art was any inspired piece or work removed from its original context. This means that what you call lunacy is actually perfectly justifiable self-expression. Being able to paint ears or fingers is no longer the most pressing role for the artist. Remember that the art of portraiture never really recovered from the introduction of the camera! These days just about anyone can create photo-realistic images.

The most stimulating way that the Internet could encourage and change artistic endeavour is if anyone out there could manage to create a truly digital jam. An on-line site where people could log on and amend an existing graphics and sound scape, polishing, roughing up or recreating. It could work in almost the same way as graffiti on a wall, where the smart artists will integrate their work, tag the work of others or just superimpose their

efforts. The potential for artists who never meet to work on the same pieces and all contribute their individual talents would be unrivalled.

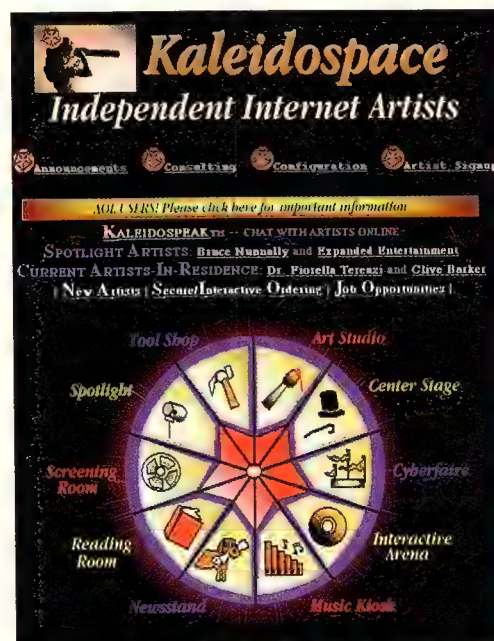
Ben Craddock, London

Nice pipe dream Ben, but until baud rates and processor speeds pep up, the digital jam would be just that. An information traffic jam. Anyone out there know of any sites or projects that are aiming to realise this vision?

Thanks for the good list of Internet sites to go with your Art on the Internet investigation, but I'm surprised that Kalida-Space didn't make it on. The Los Angeles based outfit have a great site with resources, artists in residence, galleries and a workshop feel rarely associated with other mere on-line galleries.

Herb Rinse, Via the Internet

Yup, we should have covered Kalida-Space but any one of the directory sites we included should get you there after a couple of leaps. Anyone who wants to check out the site – I'm told it's Thomas Dolby's favourite hangout – can find it on <http://kkspace.com>.



◆ A major benefit for artists on the Net is the ability to meet and to exchange and exhibit work for free

WRITE NOW!

PC Answers needs you! Or your words, at least. Or your music or graphics or programming. Send us anything – your opinions, your creative works, your fury. If you deliver anything entertaining, erudite or smart, you can see your name in print, get on the Showcase section of the CD-ROM and maybe even win yourself £50. What are you waiting for?

Write to:

**The Editor, Letters, PC Answers,
30 Monmouth Street, Bath, BA1 2BW
or e-mail us at pcanswers@futurenet.co.uk**

PC ANSWERS

Editorial

Editor: James Binns
(pcanswers@futurenet.co.uk)
Deputy editor: Steve Patient
Production editor: Jo Parker
Features editor: Chris Lloyd
Staff writer: Steve Bough
Art editor: Helen Hayward
Art assistant: Chris Crookes
CD-ROM editor: Simon Booth
CD-ROM manager: Ben Rodd
Illustration: Ian Mudie
Cover Model: Mortimer
Model Agency: Dammers Model Agency
Photo manipulation: Simon Windsor
Photography: Rob Scott, Jonathon Fisher

Advertising

Advertising manager: Duncan Ferguson
Senior sales executive: Rob Bennett
Sales executive: Adrian Hill

Marketing

Marketing manager: Gill Stevenson
Marketing executive (mail order): Simon Howarth

Marketing assistant (subs): Simon Steele

Production

Production manager: Richard Gingell
Ad designers: Sarah Moody, Liz Tuck
Production coordinator: Tracy O'Donnell
Production technicians:

Jon Moore, Simon Windsor
Chris Stocker, Simon Chittenden,
Jason Titley, Mark Gover
Group production manager: Judith Middleton

Management

Publishing director: Jane Richardson
Assistant publisher: Simon Moss
Managing director: Greg Ingham
Chairman: Nick Alexander

Distribution and circulation

UK and overseas newsstand:
Future Publishing Ltd 01225 442244
Circulation director: Sue Hartley
Printed in the UK by St Ives plc

Colour origination

Phoenix Reprographics, Bath
Contact: PC Answers, 30 Monmouth
Street, Bath Avon BA1 2BW
Tel: 01225 442244 Fax: 01225 447465
e-mail: pcanswers@futurenet.co.uk
Cover Disk and CD-ROM helpline: 01297
553900 (9.30am to 12.30am weekdays)

Subscriptions and mail order

Future Publishing Ltd, Freeport (BS4
900), Cary Court, Somerton TA11 6BR.
Enquires: 01225 822510
Order line: 01225 822511

© Future Publishing Ltd 1995

No part of this publication may be reproduced without written permission from our publisher. We assume all letters sent – by e-mail, fax or post – are for publication unless otherwise stated, and we reserve the right to edit contributions for the sake of clarity and brevity. Contributions are accepted only on the basis of full assignment of copyright to Future Publishing. We cannot be held responsible for mistakes or misprints. PC Answers recognises all copyrights in this issue. Where possible we have acknowledged the copyright holder. Please contact us if we have failed to credit copyright.

Basic subscription rate

The subscription rate for 12 issues including postage for the HD version is £47.88 in the UK, £71.93 in Europe and £98.93 for other countries. The subscription rate for 12 issues including postage for the CD version is £59.88 in the UK, £85.34 in Europe and £105.86 for other countries.

FREE SEVEN MEGABYTE CATALOGUE

26268 D 140p	123 POWER - Lotus macro language tutor	25637 D 30p	FIDDERLY FISK - Demo collectors must have	05379 D 150p	PC-CAI v2.11 - Creates interactive lessons
23606 W 140p	20/20 v1.1 - Professional image viewer	15764 D 50p	FILEIT v2.10 - Simple powerful freemform database	11071 D 30p	PC-CONFIG v7.30 - Informative sysinfo program
23711 W 80p	3D DOODLE - Full featured & easy drawing	26315 W 170p	FIND-IT FAST v1.0 - Realworld freemform database	04708 D 50p	PC-DRAFT v1.26 - Drawing and design
07521 D 100p	4DOS v5.5C - Replaces COMMAND.COM	11108 D 60p	FINTRIS v1.25 - One of the best Tetris clones	23266 D 50p	PC-DRUMMER v3.2 - Drum machine simulator
03670 D 60p	ACTION GRAPHICS v2.2 - Fun animations	02460 D 60p	FLEXIBACK PLUS v4.0 - Excellent back-up system	08802 D 50p	PC-ECAP v3.01 - AC Circuit Analysis Program
17168 W 230p	ACZAR v2.10 - Superb archive manager	25672 D 80p	FLOWER CARD v6.3 - Mah Jongg type game	03240 D 40p	PC-FASTYPE v4.1 - One of the best typing tutors
25736 D 190p	AF BOOK-KEEPING COURSE - Full tutorial	28653 D 40p	FMAZZI v2.1 - A must-have for maze enthusiasts	04353 D 200p	PC-FILE v7.0 - Powerful relational database
26491 D 50p	AGSI v1.0 - Very powerful system analyser	26294 D 50p	FONT MAKER v2.0 - Makes TIFs & others	04299 D 60p	PC-GLOSSARY v6.4 - Classic computer reference
17157 D 30p	ALMANAC v94 - All sorts of fascinating info	02814 W 80p	FONT MONSTER v3.5 - Superb TTF manager	26096 D 30p	PC-KEY v1.01 - Simple but good typing tutor
02786 D 40p	ALPHA MAN v1.1 - 20 block moving puzzles	09990 W 70p	FONTMIME v2.7 - Font comparison & printing utility	23818 D 40p	PEER GYNT'S UNION - Alternative medicine
26158 D 10p	AMALGAM - Alternative fillings explained	00524 D 230p	FORM SIMULATOR III - VGA test drive & inspect	11614 D 60p	PEP v1.6 - Excellent drawing & layout package
24397 D 50p	AMI BIOS INFORMATION - Nice tutorial	05322 D 30p	FORMATCM v2.0 - Automatic disk formatter	17195 W 20p	PENTAMINO v1.0 - Windows game of logic
09848 D 50p	AMISSETUP v2.7 - Complete setup control	07204 D 60p	FORMGEN II - A favourite form designer	12951 D 40p	PERSONAL CHALLENGE v1.1 - General trivia
12083 W 20p	ANIMOUSE v4.0 - Amazing animated cursors	08691 D 100p	FORMULA 1 - A good algebra tutorial	04728 D 40p	PERSONAL TAROT v3.1 - Mysteries explained
04453 D 70p	AS-EASY-AS v5.5E - Lotus spreadsheet clone	08717 D 100p	FRACTINT v19.1 - Fractal creator & tutorial	07145 D 30p	PIANO MAN v4.0 - Compose & play for Speaker
28398 W 170p	ASTRO22 v4.3 - Superb astrology system	05038 D 160p	FREEWAY LEDGERMASTER v3.5 - Accounts Package	26303 W 360p	PICTURE GAMES v1.0 - Seven memory & puzzle games
16254 D 30p	ASTROFIRE v1.0 - Stunning graphics blaster	24124 D 70p	FRIENDLY TYPING TUTOR - Enjoy learning	25720 W 50p	PIGS v1.0 - Exciting game of skill & strategy
26993 D 30p	AUTOMATED PURITY TEST v2.69 - Will you burn in hell	23705 D 40p	FRONTLETS - VGA bible verse screen saver	26101 D 40p	PILE-UP v3.01 - A classic multi level Tetris
08457 D 60p	AVARICIUS v1.6 - Graphic adventure in Pompeii	26072 D 30p	GANJA DIGEST NO 58 - A Ganja 94 Emag	23280 D 120p	PLETHORA v2.2 - Awesome DOS desktop
10960 D 30p	AVOID THE NOID - Deliver Pizzas or big trouble	06650 D 100p	GATEWORLD v2.0 - Super arcade space game	25722 W 50p	POSTER PROGRAM v1.2 - 10 times single sheet
26033 W 100p	BACKDESK v3.0 - Updated BackMenu & BigDesk	04822 D 30p	GCSE MATHS - Good revision material	26106 D 30p	POWER TEST v1.0C - Hearing & perfect pitch test
19286 W 40p	BACKTOSBAS WIZARD v2 - Windows cleaner	23481 D 30p	GEMSTONES II - Spectacular breakout clone	08581 D 40p	POWER CHESS v5.3 - Best DOS Chess game
26978 D 10p	BANGING THE BIOS - Psychopathic computing	25694 D 20p	GET THE CRYSTALS 2 - Needs quick thinking	19531 D 20p	PRIME - AIRFRAME - Assembly 94 demo winner
20835 D 50p	BARSOFT FORTUNE TELLER - Cynical screen saver	17737 D 20p	GETTING STONED - Guide by the Ragga Twins	03783 D 50p	PRINT PANTAMINO v3.02 - Signs, posters & banners
23586 D 10p	BBSING FOR BEGINNERS - Easy reading	26182 D 80p	GFXFX2 - Brilled collection of PAS files	22726 W 50p	PSYCHIC ADVISOR v1.0 - Interesting answers
28275 D 80p	BEAR STORMING - Classic young children's flying game	26079 D 20p	GLOSSARY OF INTERNET JARGON - All of it	26983 D 10p	PULSES v1.0 - Spectrum analyser for sound files
21361 W 60p	BEAVIS & BUTTHEAD - Four outrageous WAV files	08648 D 80p	GORINS ORGANISER v2.03A - GUI Desktop	26188 W 50p	PYROMETRIC CONES v1.0 - Info for firing ceramics
26309 W 30p	BECKER TOOLS ICON EDIT - Professional icon editor	20478 D 80p	GRAPHIC DISPLAY SYSTEM v3.1F - Brill for all pics	03302 D 10p	QEDIT ADVANCED v3.0c - Latest version of best text editor
22121 D 20p	BEDTIME AT THE ESCHER'S - JPEG format	04292 D 80p	GRAPHIC WORKSHOP v7.0E - Image converter	26189 W 10p	Q-MONITOR v1.2 - Out of memory monitor
21528 W 30p	BELCH WAVES - Twelve good specimens	15782 D 90p	GROWIT MK III - Good gardening guide	28714 W 100p	QUIZBUILDER v1.0 - Create quizzes with sounds & images
24064 W 130p	BESTBOOKS - Small business accounts	25901 D 40p	GUI ROL v1.0 - Card file plus images	16549 D 70p	RACHEL'S DOLLS v2.2 - Dressing up game
09964 D 50p	BIBLE COMPANION v5.01 - Bible study aid	25903 D 50p	HAC DOS v1.02 - Complete DOS reference	25812 D 20p	RAMMER v1.01 - Possibly worlds strangest Tetris
23738 D 20p	BIO-LOTTO - Pick numbers & learn biorythms	25904 D 50p	HAC SIMPLE v1.04 - Computers simply explained	05358 D 60p	RAMSEY'S I CHING - Simulates Chinese oracle
24338 W 30p	BIT RECYCLER (THE) v1.2 - Computer joke program	22449 D 40p	HACKERS HANDBOOK - Hugo Cornwall Edition	16653 D 60p	RAXX v1.0 - A graphic adventure of survival
28664 D 30p	BLACK HUMOUR TREASURY v3.0 - 200 grim jokes	22900 D 40p	HACKING FAGS - Masses of information	23579 D 40p	READ-A-MATIC v1.0 - Clever text to EXE converter
23741 D 120p	BLAKE STONE PATCH - Upgrade 2.1 to 3.0	03367 D 60p	HARD DISK DIRECTOR v5.0 - File manager ++	21021 D 30p	RESNET v3.3 - Help design resistor networks
08464 D 10p	BLITZ v5.4 - Powerful draughts player	23026 D 270p	HEARTQUAKE - Latest Iguana masterpiece	08593 D 40p	RESCUE ROVER - Tests your brain power
08467 D 40p	BOLO ADVENTURES I v3.0 - 40 of them	17022 D 100p	HERB POWER v3.0 - In depth colourful guide	24415 D 400p	RISE OF THE TRIAD v1.2 - New 4 disk version
23443 D 40p	BOOKBANK II v2.01 - Book collectors database	26467 D 50p	HIDIMG v3.0 - Creates Sids and Stereograms	26193 D 30p	ROADMAP FOR THE INTERNET - Very useful
05393 D 50p	BOOKS OF BUDDHA - The Gospel and the Word	08071 D 30p	HIEROGLYPH PROCESSOR v1.11E - Create unusual letters	19698 D 30p	ROSENTHAL UNINSTAT v3.0 - System clean-up
04583 D 50p	BOOTSYS v2.10 - Easy multiconfiguration utility	10664 W 40p	HOOSIER CITY - Adventure for beginners	02335 W 50p	ROSENTHAL UNINSTAT v1.0 - EXE compressor
24420 W 10p	BRAIN CUBES v1.0 - Memory training program	12862 D 40p	HOW CAN WE DO THIS - Environmental issues	06592 D 70p	SAVE OUR PIZZAS - Skunny at it in Rome
02792 D 60p	BREEZE v5.4 - Really good word processor	12005 W 40p	ICON OF TERROR - Noisy desktop vandal	08733 D 40p	SCREEN THEEF v1.58 - Captures any screen
08471 D 30p	BRIDGE PAL - Old but OK beginners bridge tutor	02469 D 60p	INERTIA PLAYER 1.20 - Digital sound player	27803 W 20p	SCREEN MOWER - Blood bath in the garden
28610 D 70p	BUILD YER OWN v2.2 - Computer DIY manual	26385 W 10p	INFOSPY v2.07 - Windows environment viewer	23960 D 40p	SHARDS v1.0 - VGA strategy & skill game
23072 W 30p	BULLDOZER - Screen saver digs up screen	16189 W 80p	INTEGRITY MASTER v2.42b - Unique Anti-virus	02846 D 50p	SHEZ v1.0.6 - Superb easy to use archiving shell
04962 D 50p	BY THE NUMBERS v5.3 - Learn numerology	08542 D 10p	I.Q. PUZZLE v2.1 - Similar puzzle to Argh	19459 W 40p	SHORTHAND FOR WINDOWS v3.0 - WP speedup
26292 D 50p	BYTES, HUGS & KISSES - Original new demo	05807 W 100p	JELLY BEAN FACTORY - Unusual Tetris	04614 D 40p	SHOWME SAVER v4.0 - Classic screen saver
05386 D 40p	C++ TUTOR v2.6 - 20 lessons with code	10537 D 40p	JILL OF THE JUNGLE - Wild graphics adventure	22290 D 50p	SILLY DOOM - Adds humour to the violence
20838 D 10p	CAMILLAGATE TAPES - Full transcript	26082 D 10p	JUKER v5.5 - Versatile Midi Juice Box	08203 D 50p	SIMPLY LABELS v4.02 - Multi featured but easy
08488 D 40p	CAPTAIN COMIC v5.0 - Classic graphic adventure	25253 D 70p	K-CHESS v2.0 - Attractively designed version	15700 D 50p	SKY BOMBERS v1.0 - Shoot it if it moves
23561 W 80p	CARTOON CALENDAR - Humorous diary	23554 D 50p	K-SPEED v4.0 - Good system & disk speed tester	02848 D 60p	SKY GLOBE v3.6 - See the stars on your screen
19749 D 60p	CATNAP - Must have Classic Animation	26081 D 50p	KAPTURE 3D v1.0 - 2 player action & strategy	17964 D 80p	SKYROADS 3D v1.28 - Mini racing game
24403 D 40p	CELLULAR MODIFICATION MANUAL - Phreakin	02980 D 80p	KILLER ADS - How to write them tutorial	20662 D 60p	SLICKER'S SLIDE v1.28 - Space highway cruising
23425 D 40p	CH'AN TAO CHIA - Essays & Lectures	13040 W 60p	KILBLASTER v1.0 - Space shoot'em up	07390 W 60p	SMART ACCOUNTS v1.5 - Small biz or home
24452 D 40p	CHAMP MS. PACMAN LIFE v1.1 THE Pacman	26848 W 40p	KITH & KIN v2.03 (ASP) - Genealogy for Windows	22770 D 40p	SOKOBAN 94 - Brilliant VGA logic game
02793 W 40p	CHARTIST v1.6 - Very attractive chart maker	07215 W 20p	KORO v1.00E - Clever multi level skill game	28585 D 30p	SOLAR SYSTEM - Beginner's tutorial
18390 D 60p	CHEETAH v3.0 - 100s of cheats hints & tips	05392 D 40p	KYE v2.0 - Brain game with level creator	20780 D 30p	SOME PEOPLES FANTASIES - Internet conference
26176 W 20p	CHORES & REWARDS v1.01 - Organise the children	25669 D 30p	THE KORAN - The E.H. Palmer translation	22645 D 30p	SOPHOCLES - OEDIPUS TRILOGY - Full text of Oedipus Trilogy
20805 D 50p	CINDY CRAWFORD - Revealing snapshot	12285 D 40p	LATOYA JACKSON - Super centerfold shot	27446 W 30p	SOUNDZ FOR WINDOWS - Superb studio library
25682 D 50p	CITADEL OF SORROW - Awesome DOOM WAD	23575 D 100p	LARSON COLLECTION - 5 Farside Cartoons	25670 D 50p	SPIRAL v1.1 - Superb Fibonacci Spirals visualisations
26298 W 50p	CLUDGER MOOD GADGET - Mmedia Extravaganza	08264 D 30p	LAURA BEYERS LEVEL CREATOR - Doom DIY	04269 D 50p	SPIROTRIS v1.2 - Strategy game with Sound FX
09997 D 40p	CLYDE'S ADVENTURE v3.0 - Newly enhanced	05488 D 20p	LETTER ATTACK v2.0 - Children's typing tutor	10659 W 120p	STUPENDOUS v5.0 - Powerful file & disk manager
05550 D 50p	COLOURING BOOK v2.2 - Toddlers picture fun	18367 D 20p	LITTLE BLACK BOOK v7.0 - Favourite address book	05217 D 50p	SUNSHINE v4.05 - Dos & Windows tutorial
17841 W 60p	COMET BUSTERS v1.1 - High speed arcade action	28687 D 50p	LOAD & UNLOAD v2.22 - Control your drivers	26427 D 50p	SUPERSTOCK v2.0 - Menu driven stock control
11493 D 50p	COMPUSHOW 2000 v1.05A - Easy picture viewer	20730 D 20p	LOGIC CIRCUIT ANALYSIS v1.1 - Logic & computer tutorial	04581 D 150p	TELEMASTER v2.0 - Powerful but easy Comm. program
11831 D 200p	COOPER GRAPHICS - Collection of 1800 PCXs	22812 D 60p	LOGISYM v3.0 - Digital logic simulator/tutorial	26295 W 210p	TENCTRAN - Tenc-tones translator & more
22032 D 40p	CRUSH v1.8 (ASP) - Add extra compression to ZIPs	08795 D 70p	LOTTO BUSTER - Powerful 6/49 system	28752 D 30p	TEXT DISTRIBUTION SYSTEM III v1.0 - Electronic publisher
23033 W 170p	CRYSTAL WALLS v1.0 - Animated Wallpaper	26616 W 40p	LOTTO CHALLENGER - Comprehensive system	2629 D 100p	THE GOOD THE BAD & THE UGLY - GFX demo plus GUS
23566 W 70p	CURSOR DELUXE v1.01 - Enhanced cursors	23498 W 70p	LOTTOMATIC v1.23 - Good 6/49 system	27174 W 40p	TIME CHASER v4.2 - Superb PIM & Contact Manager
28618 D 40p	CYBERBOX ADVENTURES v4.3 - Tests your logic skills	25930 W 30p	LOVE YOUR DOG v1.2 - Pet database plus extras	04924 D 80p	TIME LORD v2.0 - PIM and much more
17777 D 40p	DANDYLINES - 1000 good philosophical quotes	05706 D 40p	MABRY SOFTWARE MEGA PACK v1.0 - VBx's	07011 D 30p	TODAY v3.6 - Recall historical events
04553 D 40p	DAZZLE v5.1b (ASP) - Award winning graphic display	02479 D 80p	MAGIC HEXAGONS v1.1 - Clever brain game	10859 W 140p	TOP DRAW v2.0 - Object oriented drawing
23771 D 50p	DC CHALLENGE v2.0 - Electronics tutorial	07593 D 80p	MAGIC DESK v3.0 - Icon based DOS menu system	22677 D 60p	TRAN - AMBIENCE - latest Tran Demo
20444 D 30p	DEACKED v2.2 - Doom EXE editor	11448 D 40p	MAH JONGG v2.2 - Latest enhanced version	17156 D 40p	TREK GURU - Trek enthusiasts info database
25751 D 80p	DELEGATOR - Well written management tutorial	22639 D 30p	MAJOR STRYKER v1.4 - Junior maths exercises	22013 D 40p	TREKKER TT FONTS - Three Trekkie type fonts
02803 D 60p	DESERT FROG v4.0 - Classic screen saver	08798 D 40p	MATHS CHALLENGE - Junior maths sheet 'em up	05389 D 50p	TURBO PASCAL TUTORIAL v2.6 - 20 lessons
28637 D 50p	DIGITAL CHALLENGE v2.00 - Good VGA electronics tutorial	23526 D 30p	MATHS MANIA - Good drills for juniors	11270 D 30p	TUTOR MASTER v1.0 - Beginners DOS tutorial
21728 D 130p	DIGITAL DOWNS v1.41 - Animated racing simulation	26195 D 80p	MATHS ZAPPER v1.2 - Super maths drill	00083 D 80p	TUTOR.COM v6.2 - Comprehensive DOS tutorial
26967 D 30p	DIGITAL TXT - Real head banging S3M	15540 D 30p	MCHELL - MAC like front end for DOS	24325 D 100p	TWISTED EXISTENCE - Brilliantly weird demo
02447 D 80p	DISK SPOOL II v5.04 - Now in its eighth year	05109 D 50p	MEAL MASTER v8.02 - Best recipe organiser	22661 D 50p	UFO REPORTS - Much fairly recent material
25699 W 50p	DMAUD FOR WINDOWS v1.1 - Doom Audio Editor	25272 D 40p	MEAL MASTER RECIPES - 200 Thai cuisine	24413 D 80p	UK CLUB MEMBERSHIP - For club organisers
19220 W 20p	DODGER - Super Windows PacMan Clone	22696 D 40p	MEAL MASTER RECIPES - 1301 Chicken variations	15989 W 60p	VB TIPS TRICKS v2.1 - Hints & code
16205 D 30p	DOOM CHEAT v2.A - Walk through walls etc.	25713 W 170p	MEDITATIONS - Superb philosophical reading	25992 D 30p	VECTOR PRO v1.1 - C & C++ Maths library
02806 W 80p	DRAK AND ZIP v5.0 - Elegant archive manager	02089 D 230p	MELODY MASTER v2.5 - Write, edit & play	22155 D 60p	VIRUSCAN FOR DOS v2.2 (MCAfee) - Scans & cleans
11515 D 30p	DRILLER v3.5 - Maths drill for juniors	16903 D 30p	MERLIN'S MUSIC v1.02 - Music tutorial player	25731 D 40p	WADMAN v1.01 - Convert 1.X Doom stuff to 2.0
03707 D 60p	DRUMBLASTER v3.0 - Puter becomes a drum m/c	02065 D 70p	MICROBOOK v1.20 - Create electronic manuals	26283 D 80p	WARLOCK SCREEN EDITOR v1.12 - Brill
24393 D 30p	DR SICKOFF CLEAN JOKES - 600 awful jokes	23386 W 50p	MOZART v1.13 - Create & edit sheet music	23079 W 50p	WAYFARER v1.0 - Superb Program replacement
08501 D 30p	DTQ v2.2 - Clever concentration game	25712 W 70p	MSDOS INTERRUPT LIST v4.5 - 802 pages	23601 D 50p	WIBBLE v1.1 - Details of over 1000 UK BBSs
16088 D 20p	DUMPMPROG v2.62 - Disassemble EXE files & more	22869 D 40p	MUSICAL TUTORIAL v1.1 Children or adults	27317 W 80p	WINCHESS v2.1 - Well enhanced Phe Meas version
12355 D 200p	EASY BASE v5.0 (ASP) - Powerful database	23899 D 140p	MUSICASE v4.12 - Create, edit, print, play	01895 W 80p	WINFRAC v17.1 - Powerful fractal generator
02777 D 40p	EASY DRAFT v5.0 - Easy drafting with tutorial	08725 D 120p	MVP BRIDGE FOR WINDOWS - Plays good game	16032 W 60p	WINJAMMER v2.30 - Powerful MIDI sequencer
02807 D 50p	ECON PRO v2.31 - Easy configuration files editor	07068 D 80p	MYSTERIES OF THE ORIENT - Ancient puzzles	09856 W 80p	WINSLEUTH GOLD v3.0 - Super systems diagnostics
18355 D 10p	EDCON PRO v2.31 - Easy configuration files editor	20368 W 20p	MYTHS ABOUT THE BIBLE - Little known facts	25733 W 70p	WINSTROBE v2.0 - Creates strobe type effects
24060 D 10p	EDITS OF KING ASOKA - Buddhist wisdom	27439 D 50p	NEOFONTS v1.0 - 200 extra fonts for Neo programs	26725 W 40p	WINWATCH v1.11 - Comprehensive resource manager
22684 D 10p	EDITS OF KING ASOKA - Buddhist wisdom	25185 D 80p	NEOPAINT v3.1 - The best DOS paint program	04622 W 50p	WINZIP v5.6 - Built in archiving or use PKZIP
26165 D 40p	EIGHTFOOT PATH - Essential Buddhist reading	04875 D 50p	NINE MEN'S MORRIS - Multi level board game	17328 W 200p	WISDOM OF THE AGES v2.4 - 6000 quotations
12851 D 60p	ELECTRO MAN v1.0 - An action puzzle	22716 W 120p	NINE MEN'S MORRIS FOR WINDOWS - As above	24317 W 100p	WORD TRANSLATOR FOR WINDOWS - Eng/French
24439 D 10p	ELECTRONIC EVADESDROPPER - DIY info	22958 D 40p	NLRG v3.3 - Non linear regression and curve fitting	02038 D 70p	WORDY v3.12 - Clever word construction game
08420 D 100p	ENVISION PUBLISHER v2.0 - DTP for DOS	10823 D 20p	NOHMSI VIEWER v1.5 - Brilliant SVGA viewer	20760 D 30p	WURM - Wally needs your help with the fruit cake
02586 D 80p	ETCAI v1.25 (ASP) - 31 lessons in electronics	03819 D 40p	NOTEWORTHY v1.89 - Write and print scores	11952 D 40p	YOUR ESP TEST v1.4 - Find out with this test
23785 D 100p	EVASIVE MANOEUVRES v1.2 - Space mazes	25661 D 20p	NOTEWORTHY FOR WINDOWS v1.10 - As above	04955 D 60p	YOUR PLAN v2.1 - Old but easy cash controller
16214 D 80p	EXCELSIOR - Ultimate like classic style RPG	16657 D 20p	OFFICIAL PHREAKERS MANUAL v1.1 - Old but interesting	04206 W 20p	ZIPPER v1.3c - Wallpaper manager & space saver
23706 D 50p	EXECUTIONER v3.2 - Amazing DOS Desktop	05977 D 20p	OHM! LAW CALCULATOR v2.0 - Nice program	02559 D 80p	ZPELLER v4.10 - Improves vocabulary & spelling
27324 D 10p	EZ-ZINE - Simple on-disk magazine maker	08715 D 130p	ONSIDE v2.0 - Print sideways on dot matrix	12282 D 70p	ZX SPECTRUM EMULATOR Z80 v3.02 - New version
10508 D 30p	EZVIEW v5.4 - View, edit & print text, hex & zipped	24389 D 30p	OPERATION OVERKILL - 10 levels for Wolf 3D		
26973 D 120p	FAIL - Funny and bloody test animation		OPERATION VULTURE - You & your chopper		
12305 D 10p	FAROUT v4.0 - Amazing graphic display		THE PACK RAT - Addictive scrolling arcade action		
02455 D 40p	FASTFILE v5.45 - Fast, small and easy database		PANIC v1.0 - Classic Future Quest Megademo		
19576 D 10p	FAT & BOOTSAFE v2.3 - Vital safety program		PARTITION RESIZER v1.04 - Leaves data untouched		
04559 D 90p	F-PROT v2.18 - Easy to use antivirus program				
20820 D 30p	FEMALE BODY BUILDER - Shirley Beattie				

THIS IS JUST A TINY FRACTION OF WHAT IS AVAILABLE. FOR A FREE 7 MEGABYTE CATALOGUE WHICH GIVES FULL DESCRIPTIONS OF OVER 29000 ITEMS PLEASE ORDER AT LEAST ONE ITEM AND YOUR SELECTION(S) WILL BE SENT TO YOU ON THE SAME DAY THE ORDER IS RECEIVED. YOU WILL FIND 430 AREAS OF INTEREST IN THE CATALOGUE COVERING THE LATEST VERSIONS OF POPULAR SHAREWARE, TOGETHER WITH ITEMS FROM BBSs FROM ALL OVER THE WORLD. THE A1 INSTALLER WILL GET YOU GOING IN CASE YOU HAVE NOT TRIED SHAREWARE BEFORE.

D & W ABOVE INDICATE DOS OR WINDOWS PLEASE NOTE 3.5HD ONLY
A SELECTED RANGE OF ADULT FILES AND CDs ARE ALSO AVAILABLE

A1 SHAREWARE 15 ALCESTER CRESCENT LONDON E5 9PX

NAME	ITEMS COST
ADDRESS	P&P
	1 00
	TOTAL
	STAMPS PLEASE IF LESS THAN £3 19p 25p 36p 50p

The electronic postbag

The post has gone electric. Chris Lloyd delves into the world of e-mail

To be anybody these days you have to have an e-mail address. Basically, e-mail is a text message sent over a network using a modem. You can send and receive messages in seconds with anyone else in the world who has e-mail access to the Internet.

Once you've started e-mailing you'll never look back. For a start, it's not only faster than surface – or snail – mail, it's a lot cheaper. For example, an international e-mail can be sent for the cost of a local call.

These days, all the major commercial conferencing services – including CompuServe,

◆ An e-mail in an Internet newsgroup. These have threads, a series of e-mails on a particular subject. You can follow these and get up to speed on a discussion. To reply, you just click on the reply button – it couldn't be any easier

Prodigy, America OnLine and CIX, as well as many traditional BBS systems – can handle Internet e-mail. Effectively, you've got one vast network over which everybody can send messages cheaply and quickly to everybody else. The Microsoft Network will become another big e-mail player.

Correct address

The basic Internet e-mail address is divided up into two parts. For example, take our address, pcanswers@futurenet.co.uk. The first part is a local name – a person or department perhaps. As far as the Internet is concerned this can be anything. The second part is the Internet domain name. This must be a unique address. The two parts are separated by the @ symbol. You can think of the second part as the unique house address the Post Office needs in order to deliver a letter – once it's delivered a letter to a house, it's up to the inhabitants to ensure it reaches the right person.

Two people using the same commercial

service only need worry about the first part of the address. If PC Answers is corresponding with someone else on CIX we only need our internal name. To correspond with someone on another service or on the Internet, we need to use the second part as well.

All e-mail addresses have no spaces, capital letters or punctuation, other than the @ and full stops used to separate each section. One thing to bear in mind is that PCs don't guess. Get an address wrong and your e-mail is returned marked as undeliverable. In addition to your

◆ CompuServe, with its wonderful addresses that look like telephone numbers. You can use the Internet to access the full e-mail community

message, a typical e-mail message holds a lot of information, although not all mail readers – and internal company mail systems – pass it on.

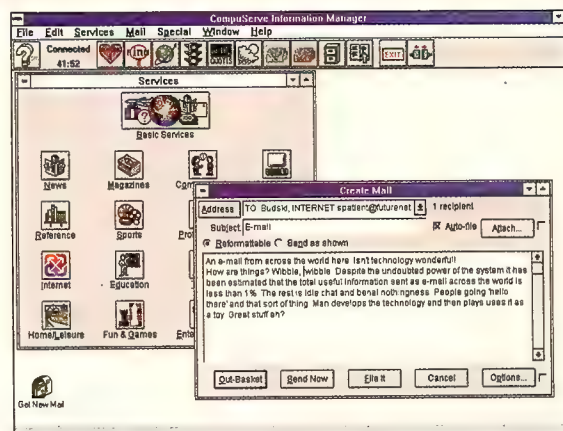
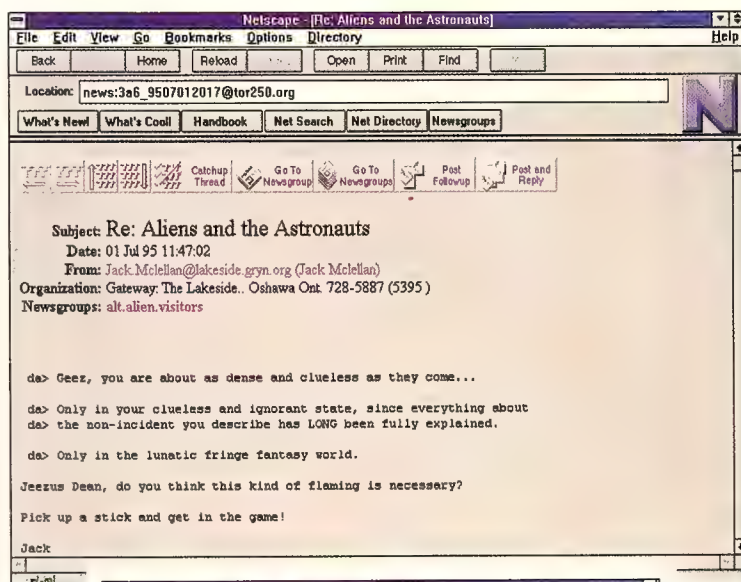
There's a header that tells you who sent the message and a mass of routing information that's only rarely useful. There's also a unique message identification number.

Every e-mail should have a subject line – it's useful and polite. Most mail readers list subject lines. Lastly, you can usually see if anyone else received a copy.

One quite tricky bit of etiquette is sigs, or signature lines. Most e-mail packages enable you to add a sig automatically to every message. Keep these short if you must

use them. Even better, use them for useful information, like voice mail numbers, surface mail addresses and so on.

You will probably come across emoticons in e-mail at some point. These are sequences of



Little black book

If you're sending mail to a chum who isn't using a direct Internet connection, then you need to include the service provider as part of the address. Here's a little guidette to the main services:

America OnLine

user@aol.com

Remember that the user name has to be lower case with no spaces.

BBC Networking Club

user@bbc.org.uk

Cix

user@cix.compulink.co.uk

CompuServe

user@compuserve.com

Use a full stop rather than a comma if you're using the id number as the user. When you're sending mail from CompuServe to the Internet, you have to add INTERNET to the address.

Delphi

user@delphi.com

Demon

user@hostname.demon.co.uk

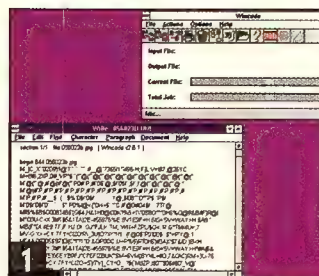
The hostname is also unique to the user.

Prodigy

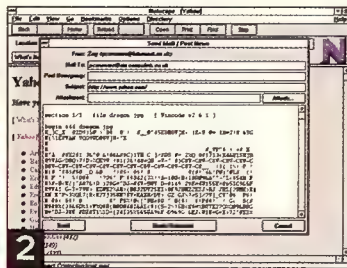
user@prodigy.com

UUencoding

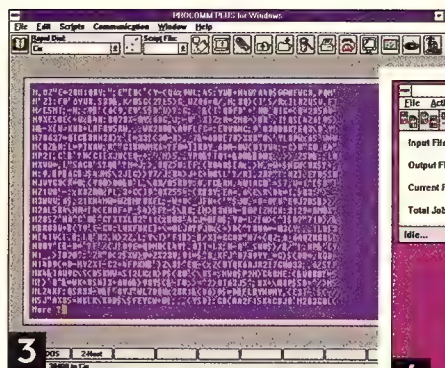
If you want to send and receive binary files – as well as e-mail messages – across the world, then you need to get involved in uuencoding. It sounds rather weird, but it's simple to do



The best uuencoding program is *Wincode*. To send a file, the first thing you need to do is encode it. Just select Encode under the file menu and feed your file through. If you now open it in a text editor you can see the header *Wincode* has written on to your file. You can add some text in here yourself, as long as it is before the line that starts with 'begin'.



There are two ways to send your new uuencoded picture: you can attach it directly to your e-mail or send it as the e-mail itself. It all depends on how the recipient can handle it. If you both have suitable software you can attach it to an e-mail. If you don't think they can handle it, cut and paste the file from a word processor directly into the e-mail message window or – if your software enables you to – load it in as the text message.



The screen shot above shows our test e-mail, which we sent from the Internet to Cix. To the human eye it's mass of completely undecipherable characters – notice all the lines are the same length. No, we haven't written it in Arabic – this is the uuencoding bit of the file. It's a good idea to try and keep the size down as much as possible. You can now capture all this text and save it to your hard drive.

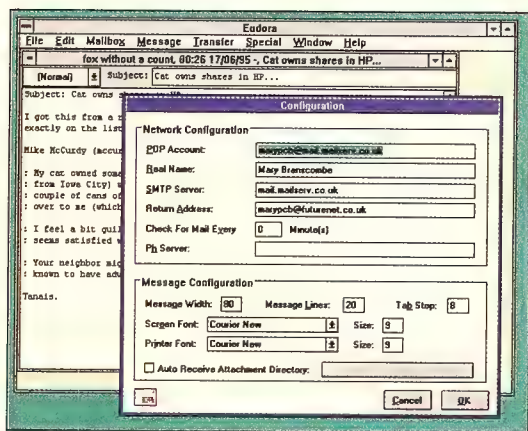


Now run the file back through *Wincode* to get your picture. All this will be a thing of the past when full uuencoding is fully integrated into comms software. From the start, e-mail wasn't designed to cope with anything other than text, but it should soon develop into a system capable of delivering any binary data, anywhere in the world.

characters designed to look like a face when viewed sideways. The classic is the smiley :-). These are a rather naff idea. How many people would use them in a letter? Very few, probably. The other thing to avoid is writing in capitals, because it looks as if you are SHOUTING. It's also harder to read.

Essential software

There are lots of mail readers – the software you need to send and receive mail. Ideally it should enable you to compose and read mail off-line and maintain an address book. On the



◆ *Eudora*, the most popular Internet e-mail software, used to send a zillion electronic messages across the world

Internet the favourite is probably *Eudora*, though even the *Netscape* Web browser supports e-mail. CompuServe incorporates mail in *Wincim*. You can usually download alternative – and suitable – mail readers from any commercial service you use. Some Internet providers include a custom mail package.

Normally, e-mail is person to person, but there are other ways you can use it. On the Internet there are listservers, which support special interest groups. You can subscribe to one by sending it an e-mail which includes the word subscribe. When you mail a listserver everyone else on the list gets a copy automatically. Similarly, you get a copy of every message it receives from other users.

Internet newsgroups

The other use for e-mail is Internet newsgroups. There are currently over 6,000 of these. Basically, you post a message and read messages from others, but you can't do it using your normal e-mail package, you need special software – again, *Netscape* is the most popular choice. Take note, though, that the signal to

“To keep costs down, compose all your messages before you connect to your service”

noise ratio of most newsgroups is poor. All e-mail is in pure text form and contains only 7-bit characters, which means you can't send binary files – .exe files, for example – which contain 8-bit characters. The solution is to convert

such data into 7-bit characters using a special conversion program known as a UUEncoder. At the other end it's converted back again. The same software does both. If you come across messages that appear to be reams of meaningless characters, then you've found something uuencoded.

Some PCs on the Internet have a limit on the size of a message they can pass on – often this limit is 32K. This means uuencoded files are often split across several messages. A newer method of sending binary files is MIME – Multi-purpose Internet Mail Extensions. If your e-mail software supports MIME, it does all the encoding and decoding in the background and you don't have to know anything about it – which is a good thing.

To keep costs down, you can compose your messages before you connect to your service and then send them all in one go. You then collect all your incoming mail and disconnect before reading it and replying to it, again, off-line. When you log on again, your replies are sent automatically.

Get ready to party

Each service has off-line readers to enable you to do this. A good CompuServe feature is an icon which sends and collects your mail in one go. You can send and receive dozens of messages in just a couple of minutes if you don't need to look at them.

All your communication problems can't be solved by e-mail, but it can certainly add a whole new – sociable – dimension to your PC and your life. If you aren't on-line yet, make sure you are soon – you're missing out on a major part of the PC revolution. **PC ANSWERS**

Five tips for great e-mail

- 1 Always include a meaningful subject line
- 2 It represents you: use the correct spelling, punctuation and grammar
- 3 Keep it tight, focused and polite – don't waffle
- 4 Don't send e-mails that just say 'thanks'. Remember to put it in your next message, when you've got more to say
- 5 If you use a sig, keep it short and relevant

This month on FutureNet

James Binns brings you the very latest reports from FutureNet and highlights from the new, improved PC Answers' Web site.

FutureNet Update

Four-up

FutureNet has quadrupled the bandwidth of its leased line. The implication of this is that more people can access the site simultaneously and the whole thing runs much faster. No more "server may be busy, try again later" error messages or infuriatingly long waits for pages to download. Tech-heads should note that the bandwidth has gone from 64k to 256k.

New encryption software

Readers wishing to subscribe to PC Answers over the Internet can take advantage of FutureNet's new server software that foils fraud by scrambling confidential credit card details. The combination of Netscape Commerce Server software, plus 40-bit RSA encryption, means that anyone using the Netscape Navigator Web browser can buy subscriptions or goods via the Internet without having to worry about hackers.



New front-end for FutureNet

We've overhauled FutureNet and now can offer a brighter, slicker interface. FutureNet editor Karl Foster explained that the old interface was: "Merely a list of Future magazine titles. Sure the magazines are 'damn fine', but those titles don't mean much to people who've never read them. Also, we're aiming to make FutureNet more of a magazine itself with original material you'll never see in print. So a better means of flagging these exciting new areas and serving ALL our readers was needed."

The code monkeys are coming

In a valiant bid to improve our online services, we have ramped up the PC Answers home page by incorporating nine of our favourite features from past issues. Future has drafted in extra staff, the unfortunately named code monkeys to code all these pages up into HTML, so they can be read via any Web browser. Check out the list to the right and log on to discover the very latest additions.

FutureNet world news

As if all this magazine mullarky wasn't enough, we're also offering a brand new service. For those interested in current affairs, we've set up a news feed from UK News and Reuters to give FutureNet readers a daily news service updated every weekday at around 1.00pm in the afternoon. You'll find all the latest sport, business, politics, crime, health and show biz news plus much much more.

The whole gang's here

You won't just find PC Answers on FutureNet. Stacks of other magazines are also represented, including sites for PC FORMAT, PC Plus, PC Guide, PC Gamer, CD-ROM Today, PC Attack, Future Music and GamesMaster. We think we can offer something to cater for virtually any PC interest.

Conduit to the world

Rather than having to type in net sites as you read the mag, the PC Answers home page will allow you to leap wherever you wish — and this month that includes all the Internet café sites too.

Statistics frenzy

Accesses rocketed by 32% to more than 475,000 a week within days of the new system going live. As you'd expect, the number of computers connecting to FutureNet is up, from around 16,000 a week to more than 20,000, and each computer represents anything from one user to several hundreds or even thousands.



PC Answers on-line brings you...

◆ Take a look at Xara Studio, the best new graphics creation system we've ever seen

Cure Hardware Conflicts

As seen in issue 10
Shows you how to get that new expansion card to work

Voice Recognition Systems

As seen in issue 12
PC Answers visits IBM to try out its brilliant speech-to-text system

Real Time Rendering

As seen in issue 14
We look at a chip technology that can make on screen rendering fly

Real life stories

As seen in issue 14
How computer graphics threaten to replace actors in the cinema

PCs in the year 2000

As seen in issue 15
What will the millennia PC be like? We take our best shot

Plus and Play

As seen in issue 16
What does Plug and Play technology mean to you?

Xara Studio

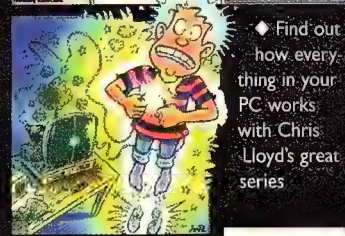
As seen in issue 17
The first review of the year's most stunning graphics program

The Wild Web

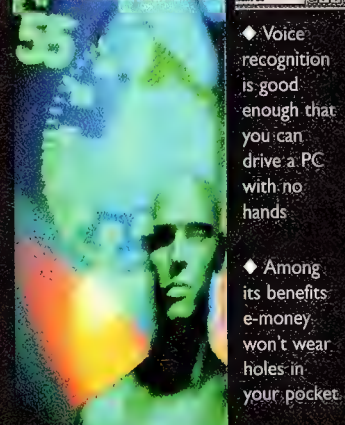
As seen in issue 17
Does the unregulated growth of the Internet threaten society?

Delphi

As seen in issue 18
Is it really capable of knocking Visual Basic from its pedestal?



◆ Find out how everything in your PC works with Chris Lloyd's great series



◆ Voice recognition is good enough that you can drive a PC with no hands

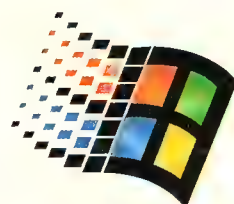
◆ Among its benefits e-money won't wear holes in your pocket

How do I get started?

You need a modem, an account with an Internet service provider and some comms software. If it's all a bit too daunting for you then why not write to our new Comms Answers section and we'll do our best to help you out. Get the kit, get the access and then get stuck into our pages.

Point your Web browser at <http://www.futurenet.co.uk>

Two into one will go



Create individualised Desktops in Windows 95, one for every day of the week. Oh, and use them to get more out of long file names. Steve Patient reports

Being carried off by squirrels while you sleep is slightly more irritating than having someone alter your Windows Desktop, but only slightly. Windows 95 puts an end to all that – folk altering your Desktop, that is – you'll have to deal with the squirrels yourself.

The Windows 95 solution is a brand new feature called User Profiles. This is tied in with the password security features built into Windows 95, so let's start there. By default, Windows 95 installed on a single user PC with no network connection doesn't require a password before you, or anyone else, can use it. However, you can choose to use passwords.

Using the password feature on a standalone PC provides a minimal level of protection against unwanted access to your Windows 95 system. This is clearly a good thing if there are private documents or data – personal financial information, letters and such like – on there that you don't want everyone to see.

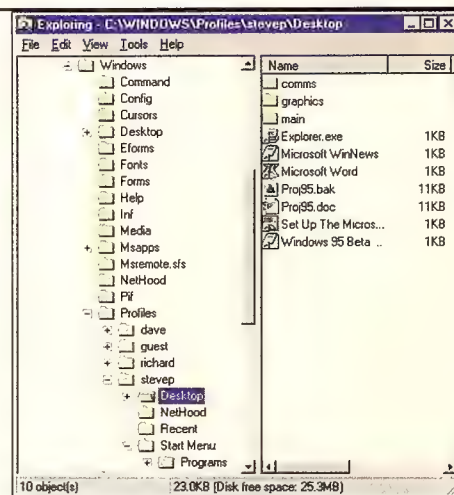
However, don't rely absolutely on it. Anyone can still gain access simply by pressing [F5] at start-up time to boot Windows 95 into safe mode, or by booting directly into DOS

using the boot menu accessed by pressing [F8] as Windows 95 loads.

Password protection is mainly intended to prevent unwanted access to other folk's PCs on networks within companies.

User Profiles can be kept on a network server – the PC that runs the network – enabling anyone in a company to log on to any PC and have it appear to be their personal PC when it starts up. However, having the PC appear to be set up individually for each member of your family is every bit as useful. For example, your PC might start with a Desktop containing favourite games for a teenager. For a younger child it could have drawing programs, educational material, more suitable games and so on.

Your personal User Profile can start Windows 95 with programs you always use already up and running. You have the documents, comms programs, Internet

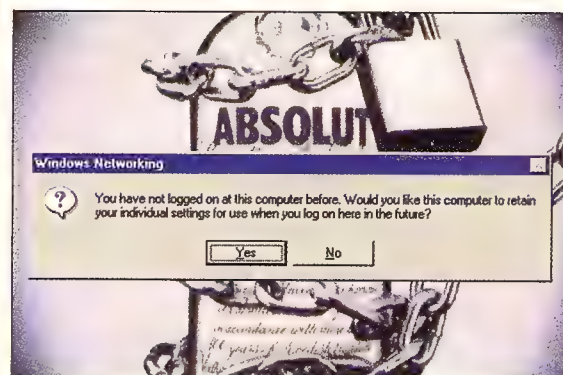
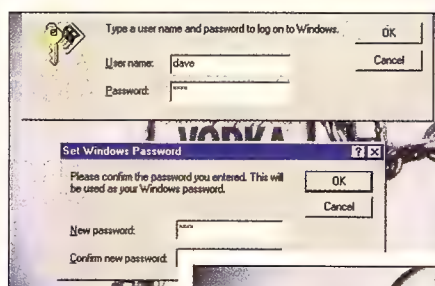


◆ In case you're wondering where User Profiles are stored, look in the \windows\profiles folder

utilities or whatever you use on the Desktop ready and waiting. You can even have different log-on names for different activities. Once you start using the User Profile facility you develop your favourite ways to make the most of it.

The User Profile customisation extends to the TaskBar settings, and even the screen resolutions you prefer. However, some features are hardware and software dependent – older hardware and existing 16-bit Windows software can't support

◆ Once you enable passwords, it's easy to create a new User Profile. Reboot Windows 95 and type in a new user name and password



◆ After confirming the new password, Windows 95 asks if you want it to preserve your settings for posterity – answer in the affirmative

Adding a User Profile

Before you can create User Profiles, you must enable log-on password protection. You do this from the Password icon in the Control Panel. You can find Control Panel under the Settings menu item on the TaskBar Start button.

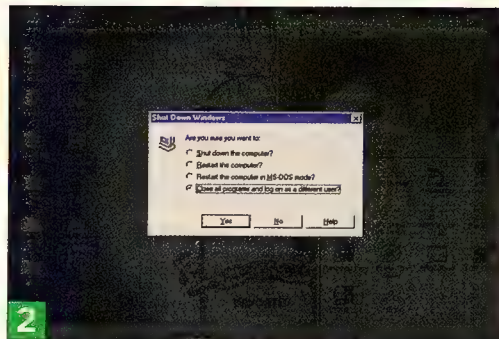
Once passwords are enabled, you are offered the default user name and asked for the appropriate password every time Windows 95 starts. At this point you can type in a new user name and a new password. Remember, you can only do this when Windows 95 is starting, you can't add a new user on the fly.

However, switching from one User Profile to another is far faster than creating a new user and can be done in a few seconds. Select Shut Down from the Start menu and click the radio button that says it closes open applications and logs you on as a different user – it happens there and then, far less time than rebooting Windows 95.

Read this before you walk away from your PC



So there you are, toiling away on your personalised Desktop, when along comes a friend who wants to try your new Windows 95.



You're just about ready to take a break, so you select Shut Down. Windows 95 pulls down the blinds and you have to select the option '...log on as a different user'.



◆ For password protected access to your Windows 95 system, start by double clicking the Password icon in the Control Panel. Select the lower button

all the new features Windows 95 provides. Making the most of them means upgrading some of your existing hardware and software.

User Profiles are stored in directories – or folders, as you’ve now learned to call them – under the

\windows directory. Each has the name of the user and contains several folders. These are \desktop, \recent, \network and \start menu, the last of which contains all the folders

that make up a custom TaskBar – note the nine character name complete with space.

Inside each folder are the Shortcuts necessary to make the scheme work – for details on

“Your User Profile can start Windows 95 with programs you always use already up and running”

Long filenames, User Profiles and legacy applications

Legacy Windows programs – those you have right now – don’t know about long filenames, so you can’t use them. Windows 95 has a partial solution, in that it automatically creates a DOS file name from the long filename – which enables existing applications to see, load and save them.

Unfortunately, when viewed in the File Open dialogs of current Windows applications, the reconstituted DOS name tends to be even less comprehensible than normal. User Profiles can reduce the impact of this problem.

Let’s imagine you create your new document from the menu that pops up when you right click on the Desktop or inside a folder. You use the New

option and choose your document type. It comes up with a default name that you can edit to something deeply meaningful and personal to you.

Although you don’t see it by default, it also has a filetype, so double clicking it starts the relevant application and loads it automatically. Let’s imagine it’s a *Word 6.0* document. Word starts, you edit the document to your heart’s content and then hit the save icon. You need never see the incomprehensible DOS name Windows 95 created at all.

Combining this idea with User Profiles you can have a word processing Desktop, a graphics Desktop or whatever, and switch between them – you can have the environment you want without the clutter.

Shortcuts see issue 18 (August) – you can order your back issue from page 101. Deleting a User Profile folder loses that User Profile, but because only

Shortcuts are involved it won’t cause any problems for anyone else who uses that PC.

When you’re using Windows 95 the Desktop can be far more personal to you than it is with the existing versions of Windows, because you can customise it to suit. User Profiles are

designed solely to enable you and anyone else with access to your PC to get the very most from it.

PC ANSWERS



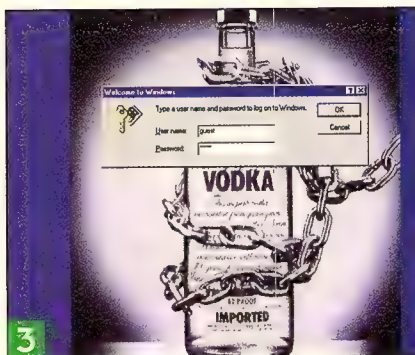
◆ The other tab in Passwords properties enables you to alter your personal password whenever you’re logged in. Change it regularly for added security

Windows 95 and Networking

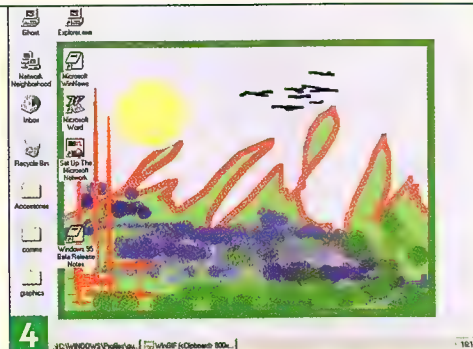
The password security feature in windows 95 is more sophisticated than it looks. Microsoft has implemented it as a unified log-on procedure. This simply means that if your PC is joined to a network, logging on to Windows 95 can be made to hand on the password to the network software which will then automatically log you on to a network.

It can also automatically deal with software that requires a password, to PCs joined to yours using the peer to peer networking built into Windows 95, and to anything else – an on-line service, for example – that requires a password.

This may not sound a great deal now, but enabling PC to talk unto PC – networking – is the next big evolutionary step in the way that we use PCs. By building in a unified password feature, Microsoft is ensuring that Windows 95 is ready for this, while at the same time encouraging the use of security features that will one day make it practical to entrust totally your privacy and your finances to a PC that absolutely anyone can get at



The screen clears and a dialog box appears. Being the forward thinker that you are, you’ve already set up a guest User Profile with a straightforward ‘guest’ password.



Seconds later, your Windows 95 system has switched to the guest Profile and you’ve gone off for a coffee, smug in the knowledge that you can switch back to where you live – a Desktop full of your favourite programs.

User Profiles

For standalone PCs, the first part of the list is most relevant, but Windows 95 applications also support the third part of the list. If you have access to a network, you also get to set up all your network preferences as well.

WINDOWS 95 CUSTOMISATION

- Desktop layout
- Backgrounds
- Font selection
- Colour scheme
- Shortcuts
- Display resolution
- TaskBar settings

NETWORK SETTINGS

- Network settings
- Workgroup settings
- Preferred server
- Preferred printer

APPLICATIONS SETTINGS

- Menu settings
- Toolbar configuration
- Fonts
- Window configuration

Build your own

You can create an alternative to the familiar, everyday world using Domark's *3D Construction Kit* – free on this month's CD-ROM. Simon Booth shows you how

Bored with reality? Make a new one to suit yourself with the *3D Construction Kit*. Using simple shapes selected from a menu you can build up a complete world limited only by your imagination. Landscapes, buildings, bridges, roads, plants – whatever you want – make up a world to suit yourself.

Superscape is the basis of many 3D games, and remains a standard game environment creation system. Naturally, a convincing world takes some thought, so spend a little time designing the components before you start – time spent thinking about the way your world is put together can save a lot of effort, enabling you to work with the program rather than against it.

Bear in mind too that an overly complex world will be slower than a simple one. Don't be too ambitious until you've mastered the basics of world creation. This project takes you through the basics of creating, moving, editing and assigning actions to objects.

When you create objects from the dashboard-style menu, they appear floating in the air. You then use the edit controls to move the object to its final location and then stretch, shrink, flip, rotate and

colour the object to suit. You can also duplicate objects, a feature which, with a little forward planning, can greatly speed up your world creation process.

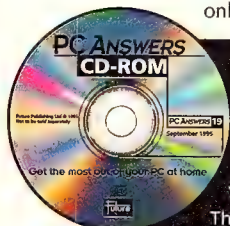
Once you've made your world you can move around within it. Unlike boring old reality, though, you can choose to walk or fly. If you decide to walk, gravity affects you as normal – you can fall off things and your perspective is the same as if that of a landbound person's.

Choose to fly and say goodbye to gravity: you can soar through the air.

There are two flying modes: the first one leads you to wherever you turn your eyes, and the second enables you to look around while you continue to travel in the same direction. There are also cameras which you can use to check on remote parts of your world.

Naturally, as the *Kit* is used mostly in game environments, you can also shoot objects. The outcome depends on when you shoot, what properties you gave the target, when you created it and whether or not it's been activated. An activated door, for example, might open, a barrel explode or the sun rise. It's up to you.

3D Construction Kit supports animation, so objects can move along paths you define or interact with each other. You can create objects you can enter – cars, for example. Flip between creation and test modes until your world works exactly how you want it to. The only limit is your own imagination. **PC ANSWERS**



On the CD-ROM

3D Construction Kit

This is the program you use to build your own worlds. For installation instructions see page 10.

VGAGAME.KIT

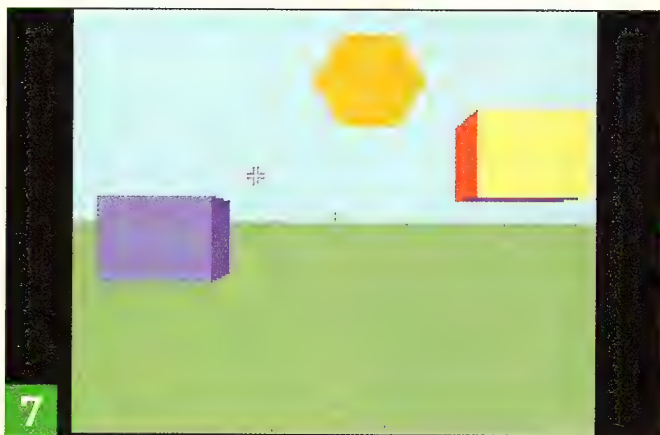
This is the test game as supplied by Domark. See page 10 for instructions on how to use it.



3D Construction Kit opens with a blank screen and a dashboard-style control panel beneath it. The ground is green, the sky is blue and all objects are shown in true perspective. Your first job is to create an object. Click on the Create button.



The newly-created object is touching the original. From the main dashboard, select Edit. Choose your object from the list. Now, from the main dashboard you can move the object, shrink, grow, rotate it and so on. Click on OK to finish.

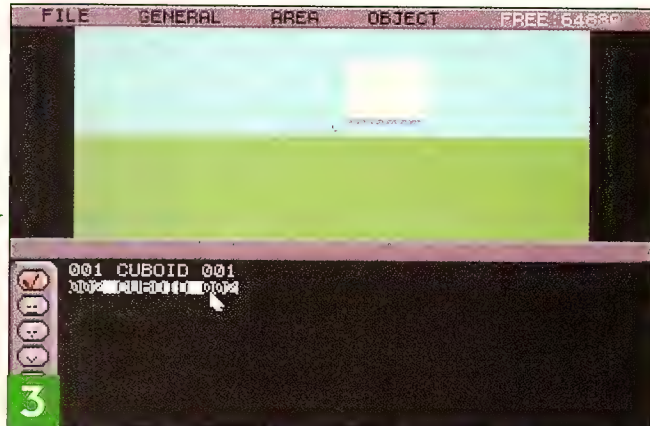


The code we've written makes the yellow cube appear and disappear as you shoot the blue cube. To check whether it works properly you can click on the Test button and fire away. Edit the conditions until it works the way it should.

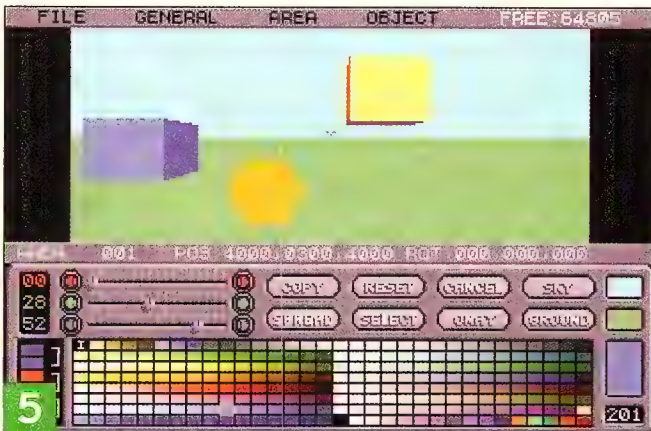
3D world



The dashboard changes to display the full range of shapes available. Here we've selected the Cube shape. Initially, shapes appear floating just above the horizon. Take note of the perspective – the vanishing point is midway along the horizon.



The original dashboard reappears when you create a shape. Next, create a copy of the original object. Click on the Copy button and an object list pops up. Select the object to be copied and a placement dialog box appears on-screen.



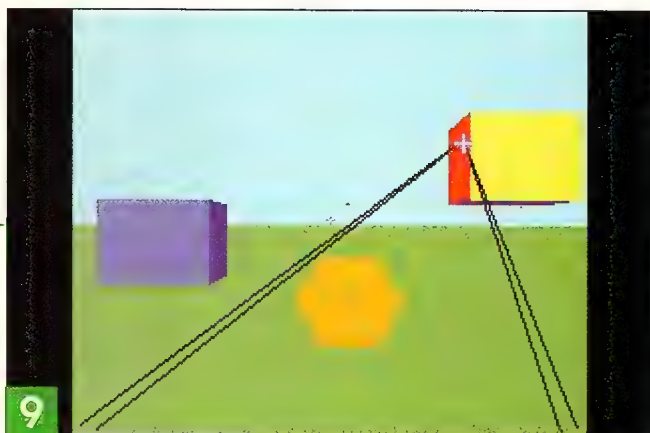
The next step is to colour your objects. Click on the Colour button. Select from the object list. Up pops a new dashboard. Left click to select a colour and then right click on one of the six colour panels at the far left to colour the object faces.



To make something happen when you shoot an object, click on the Condition – button, select an object and write some simple instructions. Check out the sample game for instructions or order the manual (see page 101).



You can now add conditions to the next object. In this example we're making the yellow cube produce the sound of a door closing each time it's shot. There are 20 built-in sound effects. You can't add your own, unfortunately.



The final step is to play your new game. Of course, your world will be a lot more interesting than the one we've created to show you the basics. Send your worlds to Showcase, c/o Simon Booth, and we'll put the best on the CD-ROM.

Code Room

At last, a PC clock that can really tell you the time. Dave Jewell puts it in words

Surprisingly, a lot of people have problems with digital clocks, preferring to convert anything they see back into analog format. If you're less than 25 years old, you're probably happy to accept 14:53 at face value, so to speak – the rest of us have an overwhelming urge to convert back into a 'real' format – seven minutes to three, in this case. If you prefer analog clocks, the *Talking Clock* program is definitely for you.

The *Talking Clock* displays the current time in an English language format, just as if someone was speaking to you. For example, at 08:01 in the morning, the clock reports the time as 'Just Gone 8AM'. At 14:30, the clock announces the time as 'Half Past 2PM', and so on.

Talking Clock also displays humorous messages at appropriate times of the day, as shown in the picture above right. You can also add your own messages – if you're feeling really adventurous, you might want to build your own alarm clock facility into the program, too.

Using the Talking Clock

The program is dead simply to use – you just fire it up. The display is small, so you can con-

◆ The remarkable *PC Answers Talking Clock* in action. Well, almost... if you really want to hear it speak, you'll have to supply a few .wav files and a little more wizardry

“The clock is designed to tell the time in English, just as if someone was speaking to you”

tinue working in another window. Although it would be simple to turn this into a 'stay on top' program, you'd probably find it intrusive. If you don't have enough screen area to display the clock all the time, use the [Alt][Tab] keys to make bring it to the front.

As mentioned earlier, the clock is designed to tell the time in English, just as if someone was speaking to you. This has some unexpected consequences – for example, just before six minutes to the hour it displays something along the lines of 'Almost 5 minutes to 6 PM'. However, when the time actually reaches

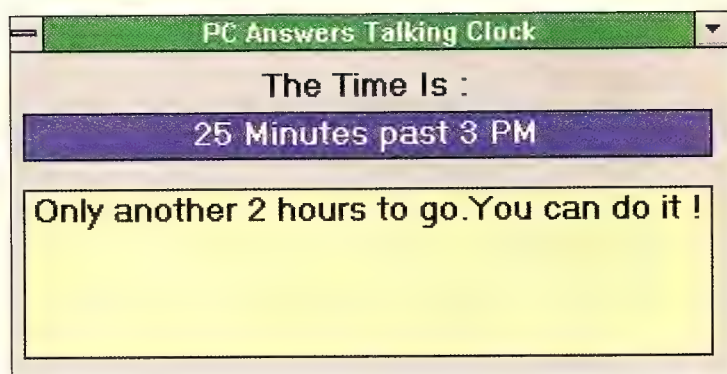
17:54, the clock reports 'Exactly 6 minutes to 6 PM'. But just a few seconds later it returns to 'Almost 5 minutes to 6 PM'.

This might seem a little confusing, but bear in mind that we're trying to simulate the rather imprecise art of reporting the time. If you're asked the time at 17:53:50, you're most likely to say it's almost five minutes to six, but – being a pedantic sort of chap – I'll probably reply that it's exactly six minutes to six if asked the same question ten seconds later. At the end of the day, I've made it work the way I like, but you can adapt it to work any way you want.

How It Works

The *Talking Clock* program – *TCLOCK.FRM* for short – only has two routines of any importance. The first is **ShowTime** and is called

once every second from the Timer Control, which is also placed on to the *Visual Basic* form. Timers are very useful controls.



1 Each time **ShowTime** is called, it gets the current system time by using *Visual Basic's* built-in **Now** routine. This is important – you might think that because this routine is called once a second, we can just update some sort of seconds count variable rather than re-reading the system clock every second.

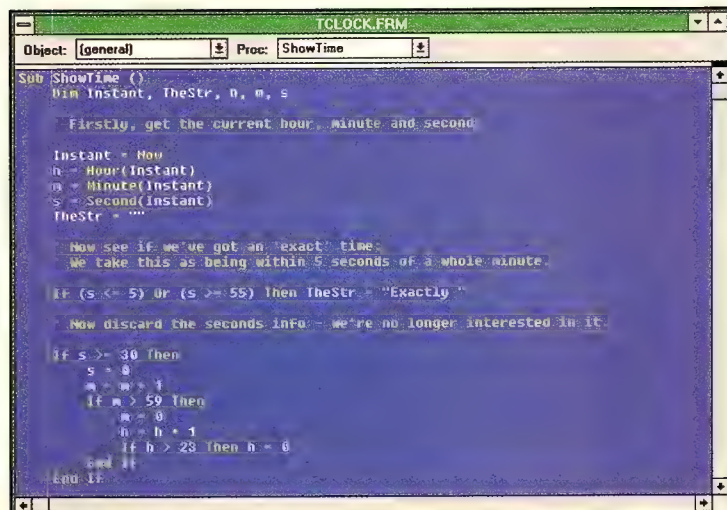
In practice, this is a bad idea: under Windows, the accuracy of Timer events is poor. If you set up a Timer control to generate events every second, you sometimes get events at half second intervals and sometimes not for minute or more if some other Windows application is hogging the processor.

Pretty well all you can say about a Timer event is that it will happen sooner or later, but you can't guarantee when. This is why it's so important to read the system time at every call.

2 The program uses VB's **Hour**, **Minute** and **Second** routines to extract the hour, minute and second values from the system time. Again, notice that rather than using **Now** as a parameter to each of these routines, we read the system time once at the beginning of the routine and store it in a temporary variable.

Again, this is an important and subtle point: suppose you read the time at 10:59 and store the seconds as 59. Reading the system time again to get the hours, there's a tiny chance that the time will then have changed to 11:00, meaning that the hour value is set to 11. This, obviously, means that your clock is an hour wrong – not very useful.

3 Having got the hour, minute and second, check to see if we're close to a minute boundary, as shown on the left. If the seconds count is between 55 and 5, you can take this as being an exact time and add the string 'Exactly' to the beginning of the description string. Why don't you do this if the seconds count is zero? The reason, of course, is that you would only see the 'Exactly' string appear for one brief second. You're not after absolute accuracy here – after all, ask someone the time at 10:59:58 and it's already 11:00:02 before they've told you that it's exactly eleven o'clock.



◆ The start of the **ShowTime** routine. First job is to retrieve the system time and determine whether it's appropriate to put 'Exactly' at the start of the description string


```

TCLOCK.FRM
Object: [general] Proc: ShowTime

' If it wasn't an exact time, try for 'Almost/Just gone'.
' We take this as being within one minute of a five minute division.
' In other words, 4 or 6 minutes, 9 or 11 minutes, 14 or 16 and so on.

If TheStr = "" Then
    If (Right$(m, 1) = "4") Or (Right$(m, 1) = "9") Then
        TheStr = "Almost "
        n = n + 1
    End If

    If (Right$(m, 1) = "1") Or (Right$(m, 1) = "6") Then
        TheStr = "Just gone "
        n = n - 1
    End If
End If

' Now print the minutes stuff.

Select Case m
Case 15
    TheStr = TheStr & "A Quarter past "
Case 30
    TheStr = TheStr & "Half past "
Case 45
    TheStr = TheStr & "A Quarter to "
Case Else
    If (m > 0) And (m < 30) Then
        TheStr = TheStr & m & " Minutes past "
    Else
        TheStr = TheStr & 60 - m & " Minutes to "
    End If
End Select
    
```

◆ Next job is to figure out if this is an 'Almost'/'Just gone' situation and work out how to express the minutes count in a meaningful way

4 The screen shot above shows the next part of the **ShowTime** routine. It's here you decide if the minute count is within one minute of a five-minute mark. Naturally, there are 12 five-minute marks corresponding to the twelve numbers around a clock face. In principle, you'd have to test the minute count against no less than 24 numbers to see if you're close to a mark. In other words, check for one, four, six, nine, 11, 14, 16, and so on. This is cumbersome – but there's a sneaky way of doing it. Notice that the last digit of any number one minute before a mark is either four or nine. Similarly, the last digit of any number one minute after a mark is either one or six. This makes the code easier.

5 Having conditionally added 'Almost' or 'Just gone' to our description string, the next job is to look at the minute count to decide what comes next. If it's 15, 30 or 45, you have to specify a quarter or half hour setting as part of the text string. If not, the code simply specifies the time as being so many minutes past the hour. If the minute count exceeds 30, it's described as minutes to the following hour. In other words, 09:42 is described not as 42 minutes past nine, but as 18 minutes to ten.

6 The final part of the **ShowTime** code – shown in the screen shot above – is the relatively simple job of appending the hour to the end of the description string. The code checks specifically for noon (hour = 12) and midnight (hour = 0). If neither of these are applicable, it simply adds AM or PM to the string as appropriate. If you want, you can change these to 'In the Morning', 'In the Afternoon', 'In the Evening', 'At Night', and so on.

◆ The **Comment** routine retrieves the hour count and shows a comment. Go overboard – get it to pick a random 'fortune cookie' from a text file

```

TCLOCK.FRM
Object: [general] Proc: Comment

Sub Comment ()
    Randomize
    h = Hour(Now)
    Select Case h
    Case 6, 7
        Comm.Caption = "Wake up and smell the coffee! Time for an early morning jog, perhaps?"
    Case 8
        Comm.Caption = "Cornflakes, Coco-Pops or maybe Sugar Puffs? Decisions, decisions..."
    Case 9
        Comm.Caption = "Another day of unremitting tedium stretches endlessly before me..."
    Case 10
        Comm.Caption = "Isn't it time for elevenses?"
    Case 12, 13
        Comm.Caption = "Surely it must be time for lunch!"
    Case 14, 15, 16
        Comm.Caption = "Only another 2 & 12... h & ... hours to go. You can do it!"
    Case 17
        Comm.Caption = "Halleluiya! Now, if only it were pay day..."
    Case 18
        Comm.Caption = "If it's Wednesday, you're missing Star Trek: The Next Generation"
    Case 21
        Comm.Caption = "Time for a night-cap!"
    Case 23
        Comm.Caption = "Without wishing to be too suggestive, it's time for bed..."
    Case 0 To 5
        Comm.Caption = "What... still working? You must be a freelance journalist!"
    Case Else
        Comm.Caption = ""
    End Select
End Sub
    
```

◆ Finally, we decide whether it's Noon, Midnight – or something in between. The **Comment** routine is called to display something witty in the Comments box of the form

```

TCLOCK.FRM
Object: [general] Proc: ShowTime

' Anything after half past is XX minutes before the next hour

If m > 30 Then h = h + 1

Select Case h
Case 1 To 11
    TheStr = TheStr & h & " AM"
Case 12
    TheStr = TheStr & h & " Noon"
Case 13 To 23
    TheStr = TheStr & h - 12 & " PM"
Case 0
    TheStr = TheStr & h & " Midnight"
End Select

Call Comment
TimeDisplay.Caption = TheStr
End Sub
    
```

How to make it even better...

There are loads of ways in which the program could be improved. In order to minimise the amount of screen space used, you might want to modify the program so that it optionally hides and shows the comments box each time it's clicked on.

Hiding the comment box reduces the form height, while redisplaying the comment box restores the status quo. You could also add an alarm feature so the program beeps at a designated time of day. If you're feeling really adventurous, you could even arrange to play a specific .wav file at certain times to give a sort of Big Ben effect. (Hint: you'll need to import the Windows API routine "SndPlaySound" from the MMSystem.DLL). As ever, the possibilities are endless...



On CD-ROM and Disk:

TCLOCK.EXE
Compiled version of the program (requires VBRUN300.DLL)

TCLOCK.FRM
The Form file needed for the project

TCLOCK.MAK
The project file itself (load this up under Visual Basic)

As usual, you can also find a working version of Microsoft's Visual Basic Primer on the CD-ROM

PD SELECTIONS

THE BEST AND LATEST IN SHAREWARE

DISK PRICES: £2.25 EACH, 6 FOR £12

(NUMBER OF DISKS IN BRACKETS IF MORE THAN ONE)

A separate payment is payable to the author if you continue using shareware programs
PLEASE ADD £1 POSTAGE TO UK ORDERS, £4 OVERSEAS

TOP NEW GAMES

*TEENAGENT - Excellent secret agent plot & click animated graphic adventure with over 20,000 frames of animation, by Metropolis Software, full registered version £25. GAME OF THE MONTH.

*RADIX INTO THE VOID (3) - Fly the heavily armed Radix class Star Fighter against alien craft, missiles and mines in this excellent Descent beating 3D game, with easy controls. Full version £25 disk/CD.

*3D CYBERPUCK - Super new air hockey type game in Doom's sort of rooms.

*FUZZY'S WORLD OF MINIATURE SPACE GOLF (2) - very attractive graphics and sound make this mini golf game one of the best releases of 1995. Highly recommended. Full version only £15, or only £10 if you spend £20 or more in total.

*TERMINAL VELOCITY (3) - Apogee's latest 3D style action arcade game. Combines Flight Sim with shoot em up and 3D action. By the authors of Microsoft Flight Sim 5. Like a cross between Star Wars and Descent. Full disk or CD version £37.00

*3DO DOOM LEVELS £15. Full boxed retail product for Doom 1 & 2

*TYRIAN (3) - Epic Megagame's excellent new shoot em up. Full disk version. £26.

*ULTIMATE CHALLENGE GOLF - The most accurate and complex golf game ever, now on shareware.

*MAGIC MADE EASY - Shows you how to do magic.

*OUTER RIDGE - The latest action packed 3D game

*THE SEARCH FOR FREEDOM (2) - Good new role playing fantasy game.

RISE OF THE TRIADS (3) - From Apogee. War is declared. Full disk or CD version £25. Triad Power Pack (disk) - Create unlimited extra levels £8.00

BREAKFREE - 3D breakout with guns etc

TUBULAR WORLDS - is this the best arcade shoot em up of all time? Loads of power ups etc.

VINYL GODDESS FROM MARS - From Union Logic highly recommended. Full registered version £25

WACKY WHEELS 3D (2) - Mega Apogee racing game. Full version only £25 disk or CD.

WRATH OF EARTH (2) - Excellent new 3D Doom/Wolf type game. Full registered version £23

*PLANET STRIKE - BLAKE STONE 2 - No shareware version. Good value at only £20

KRYPTON EGG - THE ULTIMATE BREAKOUT - highly recommended - try this one today - it's brilliant.

ALIEN CARNAGE (2) - Armed with micro-nukes, flamethrowers, grenades, etc you must free the hostages. One of Apogee's best. Full version £17

GREATEST PAPER AIRPLANES - Make your own!

TOP GAMES

MYSTIC TOWERS - Apogee 3D adventure

HOCUS POCUS (2) - Fightimps, ghosts, dragons and demons in Apogee's best ever adventure.

Full registered version only £20.

RAPTOR (2) - Apogee's best ever shoot em up.

Full version £25 disk or CD

LAMERS - Super kill the Lemmings game!

SPACE NIGHTMARE - Classy fast and furious shoot em up with loads of weapons by Microdem

BLAKE STONE (2) - Kill aliens, mutants and guards in Apogee's excellent follow-up to Wolfenstein.

Full version now reduced to £26

DUKE NUKEM 2 (2) - The legendary saviour of the earth returns for more battles. Full version £23

SPEAR OF DESTINY (WOLF 2) - Full version £25.

WOLFENSTEIN 3D - Predecessor to Doom. Full version only £26 with 60 tough levels

COSMO'S COSMIC ADVENTURES - If you like Jazz Jack Rabbit, then try this super Apogee game

KEEN DREAMS - The last Keen game

COMMANDER KEEN 4 & 6 - Battle through hordes of monsters. Full versions Keen 4/5 £20. Keen 6 £25.

*XMAS JAZZ - Special Christmas episode

*JAZZ JACK RABBIT (2) - Epic Megagames. Rated game of the year in PC Home. Full version £26. CD version with 3 extra episodes £25.

*ONE MUST FALL (2) - Super fighting game by Epic Megagames. Full version £26. CD £26

NITEMARE 3D (2) - Super Wolfenstein type game

DARK AGES - Get this great Apogee game if you haven't already!

WALLS OF BRATOCK - Fight fearsome monsters & more in shareware's best ever role playing game

SUPERBLOX - Super new Tetris game with bombs

CANNON FODDER - Virgin's top commercial war game like Lemmings now on shareware

OPERATION BODY COUNT (2) - New Wolf type game

ENTOMBED (2) - Fantastic Windows 3D adventure

ALIEN INVASION - Wolfenstein clone

DESERT STORM COMMAND - Gulf War shooting game

NYET 3 - A large variety of Tetris games

GALACTIX - Excellent shoot em up from the makers of Raptor - Cygnus Software

ZENTRIS - Like the original Tetris

CLASSIC PINBALL - Difficult but great fun pinball

MVP BRIDGE - Best bridge game

DR RPTIDE - Superb underwater submarine adventure

SPECTRUM EMULATOR (2) - Play those ole games

6 CARD GAMES - Bridge, Poker, Patience, Rummy

BATTLECHESS - The original monster chess

MAHJONG - The original and the best!

XMAS LEMMINGS - Dressed as Santa Claus!

MUSIC

GRIND - Awesome new MOD player that displays people dancing in perfect time to the music. Brilliant

SCREAMTRACKER 3 - MOD music composer

S3M MODULES (2) - Top quality music for Screamer

MIDIEDIT FOR WINDOWS - Full featured MIDI sequencer

MUSIC EASE - Musical score editor, etc. Can print out and import/export MIDI files. Input from keyboard or MIDI.

WINJAMMER 2.3 - Fully featured Windows MIDI sequencer

INTRO MAKER 3D - Make your own demos

UNTITLED - Best ever 3D demo - by Dust

GOOD BAD & THE UGLY - Top Gravis demo

ASSEMBLY 94 - demo by Future Crew/Sonic PC

PANIC - Brill Future Crew demo with gfx

UNREAL - 386+ top Future Crew demo

2ND REALITY (2) - Ultimate Future Crew demo. 4Mb

CRYSTAL DREAMS (2) - Triton demo, excellent.

MUZIKA FOR WINDOWS - MIDI musical score editor

DRUMBLASTER - Electronic drum machine

PD SELECTIONS CDROM

You can now get every single shareware title in this advert, except those marked with an asterisk*

and a whole lot more on our very own CDROM.

Only £12.00

Bang up to date Gold CD including

ALL titles except Epic Megagames £25.00

GFMUSIC - 255 track professional MIDI sequencer
SEQUENCER PLUS - Elaborate midi controller
TREKVOCS - Star Trek VOC files
MUSIC STYLES MIDI FILES - Blues, rock etc
MOD FILES (3HD) - Loads of MOD files
MIDI FILES (5) - Rock and pop MIDI files
SOUND EFFECTS VOC FILES
XTRACKER - Professional MOD sound studio
WINDOWS WAV FILES - Mainly sound sfx
BLASTER MASTER 6.0 - Edit sound files

EDUCATION

*PC MICROSCOPE (2) - Superb learning tool for biology students. Lets you analyse slide specimens under the microscope.

*PC MICROSCOPE EXTRA SLIDES (5)

GCSE MATHEMATICS - Callsalts

GCSE PHYSICS - Multiple choice

GCSE SCIENCE - National curriculum

GCSE COMPUTER STUDIES

WORD BY WORD FRENCH - GCSE French

WORD RESCUE - Super Apogee spelling game for 4-14 year olds. Full version £19

MATHS RESCUE - Excellent Apogee maths game for 4-14 year olds. Full version £19

SEA SCHOOL - Super kids' maths game

ABC FUN KEYS - fun learning the alphabet

TALKING TEACHER FOR SOUNDBOARDS

ANIMATED ALPHABET for infants

ANIMATED MATHS for infants

ANIMATED WORDS for infants

ANIMATED MULTIPLICATION & DIVISION

BASIC ALGEBRA - equations, fractions, etc

EARLY SPANISH FOR SOUNDBOARDS

GERMAN TUTOR - Learn German

EDUCATIONAL ATLAS 1994 - Superb

PC FASTTYPE VGA - Good typing tutor

PC TUTOR - All about computers

GENERAL

FILE COMPRESSORS - ARJ, PKZip etc

*PKZIP - Full version £34.00

*WINZIP - Full version £34.00

*EXECUTOR (2) - Macintosh emulator - lets you copy disks and run a lot of Mac progs

*CIA WORLD FACT BOOK 1994 - Loads of interesting info on over 260 countries

*CROSS STITCH DESIGNER FOR WINDOWS

SCREEN THIEF - Best DOS screen captures

KITH N KIN FOR WINDOWS - Genealogy

BROTHERS KEEPER 5.1 (2) - Best genealogy

BROTHERS KEEPER - full version £52

FAMILY TREE JOURNAL - Make history books

FOOTBALL FORECAST - Brand new version

BOOKIE BREAKER - Horse racing prediction

GROWIT MK II - Superb garden planner

LANDSCAPE PLANT MANAGER

GARDENER'S ASSISTANT

ORGANISE YOUR RECORDS, TAPES, CDs

GRAPHICS/RAYTRACING

PERSISTENCE OF VISION v2.2 (2) - New version of the best raytracing program.

*ANIPANT 3D ANIMATOR - Make animated movies, games, presentations etc. Superb.

POVTUTOR - Super tutorial for Persistence of Vision
POVCAD - Wire frame CAD add on
MORAY - Grid style editor for POVRAY
PV3D MODELLER - POVRAY/VIDE 2 GUI
GUM 3D INTERACTIVE MODELLER - also for POVRAY
RAYCE v2.8 - POV compatible raytracer
DAVES TARGA ANIMATOR
VIDE II RAYTRACER & VIVIDTRA (2) - Good
D-MORPH 1.1.2 - Best TGA/GIF morphing
HOMEPLAN - Layout your house
NEOPAINT v3.0 - Best graphics program
NEOPAINT FONTS (2) - 40 extra fonts
GRAPHICS WORKSHOP - for DOS
PHOTOCAD - 3D CAD program
DANCAD 3D - Superb wire frame CAD

MONO PCX CLIP ART

COOPER CARTOONS (2) - 329 pics
COOPER SET (2) - 1800 various small pics
PANTHERSOFT SMART ART 5 - New & good
HOLIDAY SNAPS PCX (2)
BIRDS
MEDICAL
CATS
FLOWERS
CARS
AIRCRAFT
DOGS
SPORTS
CHILDREN
ANIMALS
MUSIC
TEDDY BEARS

COLOURED CLIP ART

All available as PCX or GIF files
PAGE 3 TYPE GIRLS (5 DISKS £10) - Over 18s
COUNTRIES OF THE WORLD (2) - Colour PCX outline maps with cities of 246 countries
SCI-FI - quality colour pics
MILITARY - Tanks, planes, etc
AVIATION CARS & SPACE - superb set
CARTOONS - all in full colour
STAR TREK & STAR WARS (2) - Good pics
PANTHERSOFT COLOUR PCX SMART ART (2)

WINDOWS

*ENVISION PUBLISHER FOR WINDOWS (2)
High quality desktop publisher
WINDOWS GAMES PACK (2) - 30 games includes Pool, Pacman, Backgammon, Tetris, Win Trek, Risk, & loads of card, board & puzzle games etc
*PHOTOVISION PRO - The ultimate image manipulation tool. Full version £51
POPOUT - 3D stereogram generator
SCREEN THIEF FOR WINDOWS - The superb screen capture system now available for Windows
SCREEN SAVERS (2) - loads of them
FONT MONSTER - Prints catalogues of fonts etc
FONT SPEC PRO - Full font handling utility
MACAFFEES ANTI VIRUS - Latest version
CD PLAYER - with database & loads of features
WINSPELL - Spellchecker for Write
WINPROOF - Grammar checker
JAMWARE ICONS - nearly 2000 of them
TOMMYSOFT CAD (2) - Top rated CAD prog
GRAPHICS WORKSHOP - Latest version
*PAINTSHOP PRO v3 - New version
MAHJONG FOR WINDOWS - Top version
BRIDGE FOR WINDOWS - The card game
500 TRUE TYPE FONTS FOR WINDOWS
ONLY £16 (9 HD DISKS)

CD ROMS

PLEASE ADD £2 UK POSTAGE TO TOTAL ORDER.
OVERSEAS ADD £4.

GAMES CD-ROM

	Ex VAT	Incl		
7th Guest	11.91	14.00	Bugs Bunny - animations etc	10.21 12.00
Doom II	25.53	30.00	Family Doctor	13.62 16.00
Doom Accessory Pack IV - 1800 levels for Doom 2	15.32	18.00	Groliers Encyclop V7 - 1995	20.43 24.00
DZone - 900 extra levels for Doom & Doom 2			Hutchinsons Interactive Encyclopedia - British	29.79 35.00
Doom 2	17.02	20.00	Kids CD - loads of educational shareware and edutainment	13.62 16.00
F1 Grand Prix	13.62	16.00	Redshift - super planetarium	28.93 34.00
Indycar Racing	13.62	16.00	Teacher 2000 - 2294 educational shareware programs	
Jazz Jack Rabbit Enhanced	21.28	25.00	World Atlas 5	13.62 16.00
Kings Quest 1-6 Special	21.28	25.00		
Nascar Racing	19.57	23.00		
RISE OF THE TRIAD	21.28	25.00		
Specy Sensations - Spectrum emulator and loads of games	17.02	20.00		
Tornado/Falcon 3	19.57	23.00		

EDUCATION CD-ROM

Arthur's Birthday Surprise	27.23	32.00	DORLING KINDERSLEY - SPECIAL OFFER Encyclopedia of Nature 42.55 50.00 Encyclopedia of Science 34.04 40.00 History of the World 42.55 50.00 My First Incredible Diction 25.53 30.00 PB Bear's Birthday Party 29.79 35.00 Stowaway 25.53 30.00 The Ultimate Human Body 34.04 40.00 Ultimate Sex Disk 29.79 35.00 The Way Things Work 34.04 40.00 World Reference Atlas 46.81 55.00	
Harry & the Haunted House	27.23	32.00		
3D Body Works	22.13	26.00		
Animals of San Diego Zoo	13.62	16.00		
Berlitz Think & Talk series - 8 CD sets: Spanish, German or French	85.11	100.00		

ART & DTP CD-ROM

Clipart Extravaganza (20000 PCX pics on 2 CDs with book showing all)	25.53	30.00
Clipart Warehouse	10.21	12.00
Clipart Heaven	11.91	14.00
Clipart Heaven 2 - 12000 PCX pictures with a book showing all pictures	18.72	22.00
Desktop Dream - fonts and clipart with a book	18.72	22.00
Font Heaven	11.91	14.00
Kodak Photo CD Access	13.62	17.00
Professional Clip Art GIF	13.62	17.00
Professional Fonts & Clip Art	16.17	19.00

COLOUR PCX IMAGES CD

A superb new CD by PD Selections containing over 1700 full colour PCX images for use in most desktop publishers and top word processors. Loads of categories. Also includes viewers and converters.
ALL THIS FOR ONLY £14.00

SHAREWARE CD-ROM

ADA CD Rom 2 CD set	14.89	17.50
Adv in Heaven 2 - games	11.91	14.00
Adult Sensations 4000 pics	17.02	20.00
Amazing Animations	11.06	13.00
C Users Group Library	17.02	20.00
CICA Windows Feb 95	11.91	14.00
CICA Windows Dec 94 3 CDs	14.89	17.50
Cookbook Heaven 2	11.91	14.00
Gold Medal Vol 5 Mar 95	16.98	19.95
Hot Sound & Vision	14.89	17.50
Hot Sound & Vision 2	14.89	17.50
Hottest PC MegaDemos	17.02	20.00
Internet Info March 1995	14.89	17.50
Libris Britannia 4 + Book - General games, applications etc	18.72	22.00

Libris Britannia 4 Scientific	18.72	22.00
Linux 4 CD set March 95	14.89	17.50
Minerva 3	4.26	5.00
Minerva 4	4.26	5.00
Minerva 5 - 710Mb	5.96	7.00
Minerva 6 - 710Mb	18.72	22.00
Music Workshop	17.02	20.00
Night Owl 15	17.02	20.00
Night Owl 16 May 1995	18.72	22.00
PD Selections CD - best of all categories produced March 95	10.21	12.00
Plug & Play Linux O/S	14.89	17.50
POVRAY - Raytracing	17.02	20.00
Shareware Extravaganza - 4 CD set best of all shareware types	22.13	26.00
Sintel January 1995	14.89	17.50
Windows Heaven 2	11.06	13.00

MUZIQUE & GRAFIX CD

Brand new CD from PD Selections with all the best new megademos, music making software & utilities, MOD, MIDI, WAV and VOC files, musical scores, desktop publishing, image manipulation, animations and players, wallpaper for Windows, GIF files and much more.
ALL THIS FOR ONLY £17.50

GENERAL CDROM

5ft 10 Pack Vol 1	23.83	28.00
5ft 10 Pack Vol 2	23.83	28.00
5ft 10 Pack Vol 3 Special	23.83	28.00

ADULT CDROMS PLEASE CALL FOR LIST

(18) PROOF OF AGE REQUIRED. WE DO NOT CONDONE OR SELL HARD CORE ILICIT MATERIAL

DISK CATALOGUE FREE WITH ORDERS, OR SEND £2 IN STAMPS. CHEQUES PAYABLE TO PD SELECTIONS LTD.
THE WHITE HOUSE, CLIFTON MARINE PARADE, GRAVESEND, KENT DA11 ODY FAX ORDERS: 01474 320442
CREDIT CARD ORDERS: 01474 325802 OR 01474 331191



BAUD WALK

Who you gonna pay? For connecting you to a PC halfway around the world, that is.

Wendy Grossman knows who's collecting

Can this possibly be true? self-described CLOG – Computer-Literate Old Git – Dennis Wieckowski from Slough e-mailed me wondering if I could possibly explain how the Internet gets paid for. He had recently taken advantage of CompuServe's offer of nine free hours' use of the Internet included in its Standard pricing plan to try out the World Wide Web.

After starting out on the BBC's *Tomorrow's World* pages, 'A couple of clicks and I don't know how,' he writes, 'but I was in NASA's pages. Total confusion and big worries about big phone bills... Taking a global view, with all the surfers, all the investment in modems, servers, downloadables, and long distance calls, given the lack of direct advertising, who is paying? I know it must be me, but how – or is it just damn good value?'

The simple answer to this is yes, we're paying – but in ways that aren't necessarily obvious. The Internet is a co-operative: everyone pays for his or her part

of it, and everyone carries each other's traffic. A great deal of the investment required to build the backbone of the Internet itself – the highest-speed links between government and academic institutions – has been made by governments.

Big cheques

In the US, the National Science Foundation wrote the cheques to link five regional super-computing centres; here, the University of Kent was the Internet feed until commercial suppliers such as Demon set up their own connections to the US.

What you pay a service provider for is your link to the Internet, just as your service provider pays for its much bigger one. You pay for your telephone link via your phone bill; your service provider has a leased line or satellite link. If you think of buying small amounts of items from your supermarket, which in turn buys them in bulk from a distributor or manufacturer, you'll have a pretty good analogy for how it all works.

Once you're connected to the network, however, because of the co-operative arrangements, it makes absolutely no difference to your service supplier – or, consequently, to you – what part of the network you're actually looking at.

The reason things aren't like this with either the telephone or postal networks is that these companies pay each other for the actual volume of traffic they carry on each other's behalf, a phenomenon known as 'settlement'. I'm absolutely sure it's all done with computers by now, but I cherish the fantasy that in

some musty office there's a very crabby, bureaucratic, finicky, toothless old man with a deeply lined face, past whom all international letters must file – he's fastidiously noting down the numbers in little columns to make sure the US Post Office doesn't get a single letter free on the Royal Mail. (Just in case you were wondering where postal delays come from...)

According to many Internet service providers, settlement could kill the Internet. For most of them it's a real fear, as the big telephone companies and other giants get set to move into the business of Internet access, because those companies are accustomed to settlement and think it's a good idea.

Going back to CompuServe: it has, over the years since its founding in 1978, built its own proprietary network around the

world. When you dial into CompuServe's London node, for example, and read all the messages on the UK Forum, you're actually reading them off a computer sitting in a big machine room in

Columbus, Ohio.

When you write a message and send it to another CompuServe user, even if that user is based in the UK, what you're really doing is storing that message on one of those Ohio computers until the other user comes along and deletes it – by picking it up and downloading it on to his or her PC.

You don't, though, pay more than US members for the privilege. This is because the cost of has more in common with fixed costs that increase proportionately as the network's capacity is

increased, than it does with variable costs of the kind associated with individual transactions – like posting a single letter.

Think of it another way: CompuServe's three million members worldwide, most of whom pay the standard rate of \$9.95 a month in return for a host of basic services, guarantee the company a hefty cash flow to finance its operation.

Cause for concern

Will this situation last? Yes, probably. If anything, charges have tended to go down on all on-line services as the user and competitor bases grow. What most people worry about is the future of free information on the Internet. NASA's server, which Mr. Wieckowski was afraid to enjoy, will probably remain free – NASA's charter specifies that the data it collects at great taxpayer expense belongs to the public.

Even before the Web, you could buy CD-ROM discs of Voyager images for as little as \$10 – just the bare cost of distribution. Many other Web sites, though, are beginning to display the first billboards on the electronic highways, and charging for access to particularly 'valuable' or popular sites is generally expected to surface over the coming year.

The upshot for Dennis Wieckowski is that yes, it really is true: you pay no more to go see NASA's pages, and you really can roam anywhere in the world you like at no extra charge once you're connected. Nonetheless, I confidently predict that your on-line and telephone bills will be much more than you expect – they always are. **PC ANSWERS**

Wendy Grossman is a freelance writer contributing to *New Scientist*, *Daily Telegraph*, *The Guardian* and *Personal Computer World*. Contact her via us at pcanswers@futurenet.co.uk.

“NASA's charter specifies that the data it collects at great taxpayer expense belongs to the public”

EURO DIRECT

TECHNICAL SALES LINE:
0171-833 2345



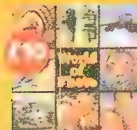
WORLD OF CD-ROM



WORLD OF GIF
More than 3000 high resolution pictures in gif format. Viewers and editors provided for MS-DOS and Windows. • animals • architecture • art • boats • cars • cartoons • fantasy • films • fish • flowers • fractals • nature • people • pinups • places • planes • reptiles etc.



WORLD OF LANGUAGES
The ultimate collection of dictionaries, thesauruses, word processors, word checkers and lessons in English, German, French, Italian, Spanish, Greek, Russian and many, many more. Includes the latest spell checkers and word processors available.



WORLD OF PHOTO
The ultimate photo collection for the PC, Macintosh and Amiga. Hundreds of top quality photo's from all over the world. You will find the perfect photograph, whether you are creating ads, slides or multimedia.



WORLD OF CLIPART
World of clipart is the ultimate clipart collection. Over 18000 clipart images for use on the PC, Macintosh or Amiga computer. Great for use in desktop publishing, presentations, startup screens or slide shows. Contains more than 600 mbyte.



WORLD OF DOS
The ultimate MS-DOS Collection. Explore software from all over the world, just imagine having a complete shareware library at your fingertips. Spend hours of fun selecting programs. Contains over 1 gigabyte of programs, utilities, music, programming tools etc.



WORLD OF FONTS AND ICONS
This is the ultimate font and icon collection for Windows. Over 500 mbytes, more than 12000 true type and Adobe fonts, more than 4000 icons. Now you can enhance the appearance of all your window applications with this complete library of fonts and icons.



TOP 100 GAMES VOL.II FOR WINDOWS
100 of the best shareware games ever made. The best games with incredible graphics, super sound effects, music and fast action. All games are easy to play in this carefully selected compilation.



WORLD OF WINDOWS
The ultimate Windows CD Rom collected from authors and libraries all over the world. Over 600 mbytes of programs. More than 3000 programs consisting of games, utilities, icons, music, programming tools, business, clipart etc. For use with MS Windows.



WORLD OF COMMS
The best communication collection available, over 3000 programs and utilities. Includes: network programs, modem utilities, BBS software, BBS door programs, Ham radio and many other useful programs and reference tools.



WORLD OF PINUPS
More than 2000 high quality hot pictures of the sexiest and most beautiful women of the world. Tools for converting, editing and viewing are provided on this CD. This CD Rom will make your mouth water.

OTHER ADULT TITLES AVAILABLE

SPEAKERS



SOUNDWAVE 15WATTS £18
SOUNDWAVE 25WATTS £25
SOUNDWAVE 80WATTS £37

SOUNDWAVE 240WATTS £54

CD-ROM SOFTWARE

DORLING KINDERSLEY

ENCYCLOPEDIA NATURE £37
ENCYCLOPEDIA SCIENCE £37
HISTORY OF WORLD £37
AMAZING DICTIONARY £27
PB BEARS BIRTHDAY PARTY £26
STOWAWAY £26
ULTIMATE HUMAN BODY £38
WAY THINGS WORK £38
WORLD REFERENCE ATLAS £44
ULTIMATE SEX GUIDE £44

MICROSOFT

ANCIENT LANDS £17
BEETHOVEN £28
BOOKSHELF 1995 £24
DANGEROUS CREATURES £24
DINOSAURS £17



ENCARTA 95 £29
GOLF £11
MOZART £28
MUSICAL INSTRUMENTS £24
PUBLISHER £23
SCHUBERT £28
WORKS £23
MONEY £24
ART GALLERY £35
CINEMANIA 95 £29
CREATIVE WRITER £32
EXPLORAPEDIA £32

CHILDRENS

BEAUTY AND THE BEAST £10
CUTE & CUDDLES £10
DAFFY DUCK £8
FARM ANIMALS £10
FUNSCHOOL 5 IN SPACE £19
FUNSCHOOL 5 IN TIME £19
FUNSCHOOL 5 IN DREAMLAND £19
LION KING STORY BOOK £19
MAGIC BUS SERIES £31

MICROSOFT PACK

MS ENCARTA '95
MS DANGEROUS CREATURES
MS WORKS AND MONEY
MS GOLF
MS ENTERTAINMENT
MS SAMPLER

DTP COLLECTION

WORLD OF GIF
WORLD OF CLIPART
WORLD OF PHOTO

LEISURE PACK

SAM & MAX
INDICAR RACING
RISE OF THE ROBOTS

REFERENCE PACK

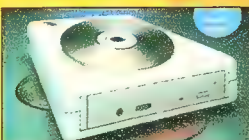
WORLD ATLAS V.5
FAMILY DOCTOR V.3

ENTERTAINMENT

5TH TEN PACK VOLUME I £21
5TH TEN PACK VOLUME II £21
5TH TEN PACK VOLUME III £23
ALIEN LOGIC £13
BENEATH A STEEL SKY £20
BIOFORGE £33
CD DELUXE PACK £10
CHAOS CONTINUUM £10
COMBAT £14
COMMANDER BLOOD £17
CREATURE SHOCK £20
CYBERIA £20
CYBERWAR £20
CYCLEMANIA £22
DARK FORCES £28
DARK SUN 1 £12
DARK SUN 2 £14
DAY OF TENTACLE £11
DISC WORLD £31
DOOM II £23
DOOM DEVELOPERS £8
DRAGON'S LORE £16
ECSTATIC £28
F15 STRIKE EAGLE III £22
FULL THROTTLE £28
FLIGHT UNLIMITED £29
FLIGHT SIM 5.1 (MS) £26
GABRIEL KNIGHT £13
GREAT NAVAL BATTLES II £14
HAND OF FATE £27
HELL £18
HUMANS I & II £9
INDIANA JONES £14
INDY CAR RACING £9
IRON HELIX £9
KINGS QUEST VII £29
KINGS QUEST COLLECTION £24
KLIK AND PLAY £30
LANDS OF LOVE £12
LAWNMOWER MAN £8
LEISURE LARRY I-VI £16
LION KING STORY BOOK £31
LITTLE BIG ADVENTURE £30
MAD DOG I £10
MAD DOG II £14
MAGIC CARPET £28
MAXIMUM OVERKILL £29
MICROCOSM £12
MYST £35
MONTY PYTHON £25
NASCAR RACING £18
OUTPOST £15
PANZER GENERAL £14
POLICE QUEST IV £16
POWER RANGERS £10
QUARANTINE £19
RAPTOR £19
REBEL ASSAULT £20
RETURN OF ZORK £12
RISE OF ROBOTS £16
SAM AND MAX £18
SIM CITY 2000 £25
SPACE ADVENTURE £8
STAR CRUSADER £11
STAR TREK FINAL UNITY £34
STREETFIGHTER TURBO £17
TFX £18
THEME PARK £26
TORNADO £9
UFO ENEMY UNKNOWN £17
VIRTUAL POOL £32

CD-ROM DRIVES

PANASONIC 562/3 £69
MITSUMI QUAD IDE £128
NEC QUAD IDE £132
AZTECH QUAD IDE £136



PLUGS DIRECTLY INTO YOUR PARALLEL PORT - NO NEED FOR INTERFACE CARDS - IDEAL FOR THE USER ON THE MOVE
TWIN SPEED £186
QUAD SPEED £284

SOUND CARDS

SOUNDBLASTER 16 VALUE £64
SOUNDBLASTER 16 PRO £87
SOUNDBLASTER AWE-32 £128
ORCHID WAVEBOOSTER £89
GRAVIS MAX £134
GRAVIS ACE £75
SOUND GALAXY PRO 16 £59
TELEVIDEO PRO16 £52
TELEVIDEO AWE-32 £115
PORTABLE SOUND PLUS £118
(SOUND THROUGH YOUR PARALLEL PORT)

VIDEO CARDS

MPEG MASTER £198
VIDEO GALAXY GAMMA £155
ORCHID 2MB KELVIN £294
ORCHID VIDIOLA £248



PC-TV OUTPUT MODULE

PLAY YOUR PC THROUGH YOUR TELEVISION • UP TO 800 X 600 • SCART, S-VIDEO OR COMPOSITE

REELMAGIC LITE £198
928 MOVIE £188
WIN-TV CELEBRITY £264
CREATIVE MP-400 £189
CREATIVE RT-300 £278

JOYSTICKS

DEXXA MAXSTICK £7



PHANTOM 2 PHASE 9 £17
QUICKSHOT WARRIOR 5 £8
CH FLIGHT STICK £27
CH FLIGHT STICK PRO £48
GRAVIS ANALOGUE £24

WE PROMISE TO MATCH ANY ADVERTISED PRICE (SUBJECT TO STOCK)

MEMORY

PREPARE YOURSELF FOR WINDOWS 95. UPGRADE NOW TO THE REQUIRED 8MB WITH OUR TAILOR MADE KITS:

30 PIN

AMSTRAD 386, 486
COMMODORE PC40/50
DELL 310,320,486
DAN TECHNOLOGY 386,486
ELONEX 386,486,SX/16/M
GATEWAY 386,486SX/DX
HP VECTRA 386,486
ICL 40/50/55
OLIVETTI PCS386,486
PACKARD BELL 386,486
TANDON SL386,486
VIGLEN GENIE,ELITE,486

2MB KIT £60
4MB KIT £118
8MB KIT £228

72 PIN

AMSTRAD PC9486
COMPAQ PROLINEA
DELL 486 SX/DX
ELONEX PC500
GATEWAY 4SX/DX
IBM PS2 70,APTIVA
OLIVETTI MODULO

4MB MODULE £138
8MB MODULE £246
16MB MODULE £398

THIS IS JUST A SELECTION PLEASE CALL IF YOUR MACHINE IS NOT LISTED.

WINDOWS '95

Windows '95 will completely replace MS-DOS. It adds a whole new range of utilities to your PC with its smarter, easier to use interface. Finally bringing true 32-bit multitasking to the desktop.

£59

Phone NOW to reserve your copy.

DELIVERY CHARGES
RECORDED POST £2.50
48 HOUR COURIER £5.00
OVERSEAS £7.00

OPENING HOURS
MON-FRI 9 AM - 6 PM
SATURDAY 10 AM - 2 PM
PERSONAL CALLERS WELCOME!

ALL PRICES EXCLUDE VAT AND ARE SUBJECT TO CHANGE

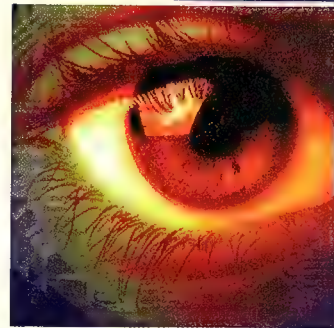
WE HAVE MOVED

90-92 PENTONVILLE ROAD, LONDON N1 NHS

PC ANSWERS

Get the most out of your PC at home

Reviews



Get ready for another selection of great reviews. We tell you what's hot and what's definitely not, to guide you in your buying decisions

PC Answers reviewers



STEVE BOUGH
Shareware and games hold no secrets for Steve. He works through the month's releases to find the best



DAWN GORMAN
Children's software is often far too complex for its supposed audience. Dawn finds some that's just right



CHRIS LLOYD
As you can see, Chris hasn't had his face stretched into an elastic grimace by the program *Elastic Reality*



STEVE PATIENT
Steve looks into the utilities side of things this month. Find out if you can really double your RAM



JAMES BINNS
Our new editor investigates the phenomenon commonly known as *Star Trek*, in its latest incarnation

Software

Elastic Reality page 66
Put an impossibly wide smile on your face with this morphing package. Be warned: some effects are surprisingly gruesome

Autodesk Animator Studio page 71
A heavyweight 2D animation package. Traditional film techniques and more experimental approaches at your fingertips

MicroLOGIC page 73
Ready to make music? Get your PC warbling with a hot new MIDI sequencer. Is this the one for you?

QuickTax '95 page 74
Here's something to help you cope with those stultifyingly boring tax returns. It won't make them fun, but it'll make them a lot easier

TaxCalc '95 page 74
But is this one better?

3D Atlas page 77
Take a brain-stimulating trip around the globe, learning about power consumption and the gross domestic product per capita. Handy stuff

MagnaRAM page 78
Double your RAM! That way you can load in even more games!

WinProbe 3 page 78
A top-selling utilities package. This tells you all sorts of facts about your system... some of which are very obscure

Mario Teaches Typing page 80
If you think you need to type, and can trust an Italian plumber to teach you, this program is for you. Kids'll love it, too

Haight-Ashbury in the Sixties page 80
Remember the '60s? Yes? You obviously weren't in San Francisco then. Relive those happy, happy days when everyone wore flowers in their hair

Hardware

Winstation 133 page 77
Fancy a mind-blowing, truly incredible PC? Can you cope without your car? If you want the the Winstation 133 you'll have to sacrifice a lot of cash

Shareware

Juggle Crazy page 82
Learn one of life's harder skills - juggling. A perfect talking point for those awkward moments when you're lost for words

Future Dimension page 82
More aliens, more weapons, more levels, more aliens. A good, traditional alien shoot-'em-up to keep you cursing for hours

Cold Dreams page 83
Hideous beings, hidden rooms and level guardians. Dark mazes and warlords. Battles and immortality. Need I say more?

Fab Four page 83
If you are - or have ever been - a Beatles fan, you'll love this quiz. Of course, you need a good memory to win points

SmartSurf page 84
Surfing the Net can be an expensive business. This shareware program keeps tabs on how long you've been on and how much it's costing you

Fonter page 84
You know the process - you spend time loading in the fonts only to find that they're not suitable. This program puts an end to all that fiddling around

Education

Director's Lab page 86
There are countless video studios available for us grown-ups, but surely this is a concept children would really adore? *Director's Lab* enables junior to have a go

Wonder Land page 87
Listening is a skill often overlooked in children's software, but *Wonder Land* encourages them to act on what they've heard, rather than seen

Playing with Shapes page 87
A series of 2D activities to enable children to develop their coordination - with some help from Cleo the Clown

Games

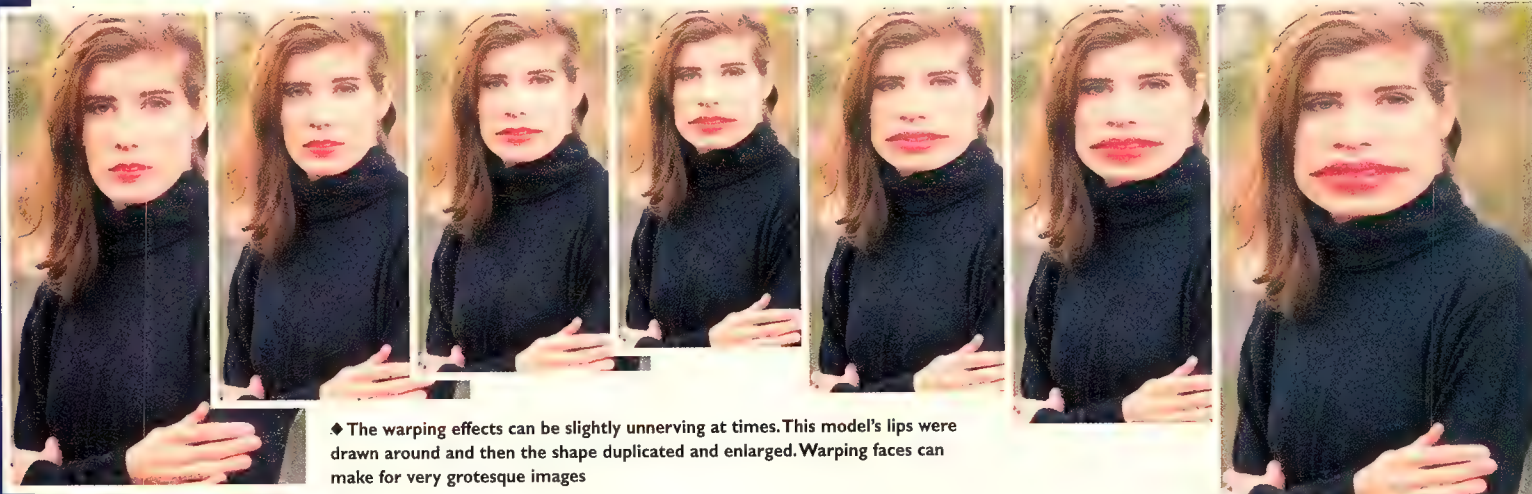
Star Trek: The Next Generation page 88
What is there to say about this much-loved, much-anticipated game of the TV series? Nothing, really - you either adore it or you're in a very tiny minority

FX Fighter page 89
The beat-'em-up hits the PC - with quite dramatic results. A martial arts tournament featuring lots of kicking and slapping

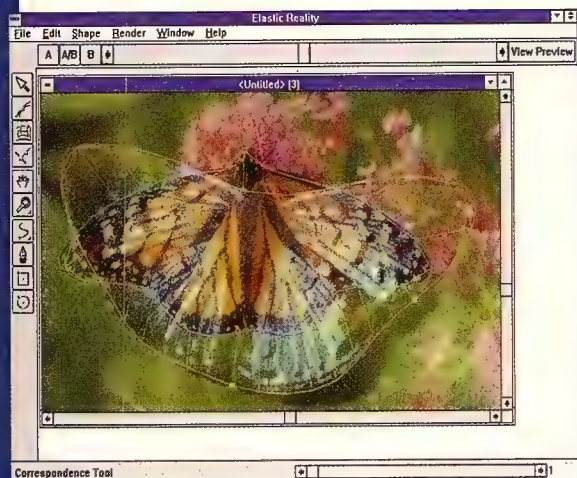
Micro Machines 2 page 90
Just pick your vehicle according to the terrain - and off you go. Try not to collide with the cashew nuts...

Hi-Octane page 93
An all-action racing thrash with some fantastic scenery - the perspective will have you flinching in your hover car, too

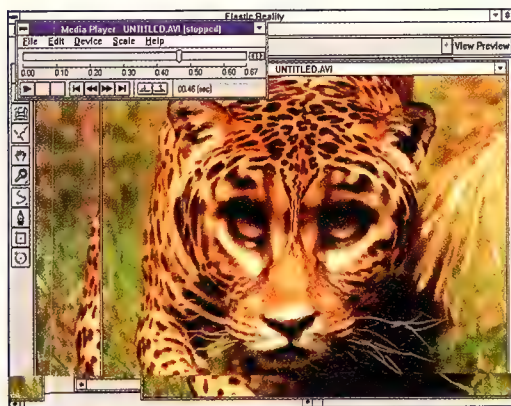
In PC Answers, space for reviewing products is limited, especially when you think how much new software and hardware is released each month. We review a very broad selection of what's on offer - so there's always something which interests you



◆ The warping effects can be slightly unnerving at times. This model's lips were drawn around and then the shape duplicated and enlarged. Warping faces can make for very grotesque images



◆ A morph ready and waiting to be generated. You can superimpose the start and finish images over each other and show how the control curves will move



◆ Poor kitty, he's been looking at his screen too long. This is the largest Video for Windows size possible, 640 x 480 pixels. Good stuff if your PC has lots of hard drive space and can cope with playing it back

Elastic

Reality isn't always what it seems – especially when you've been at it with a morphing package. Chris Lloyd twists and bends

You're going to love this one. *Elastic Reality* is an incredible package that works digital magic over still and moving images, bending and twisting pictures into new and strange shapes. It does the kind of stuff you've seen and marvelled at in films and on television. The weapons at your disposal are morphing and warping; armed with these you can turn out professional-looking effects worthy of any science-fiction film.

The morphing process transforms one image into another, slowly moving and changing colour – it was a film favourite for a while and now pops up in music videos and TV adverts. Warping is similar, but distorts only a single source image – the classic effect is to make someone's eyes bulge out rather disturbingly.

File support is extensive, every major still picture format is covered and *Video for Windows* takes care of moving images, along with some esoteric formats requiring special hardware. .FLI and .FLC are not yet supported, but this is promised for a future version. It can produce animation as a series of single frames, such as 24-bit JPEGs, but extra hardware help – such as a personal animation recorder which uses dedicated hard drives and memory – would speed things up significantly. For all practical purposes, you're going

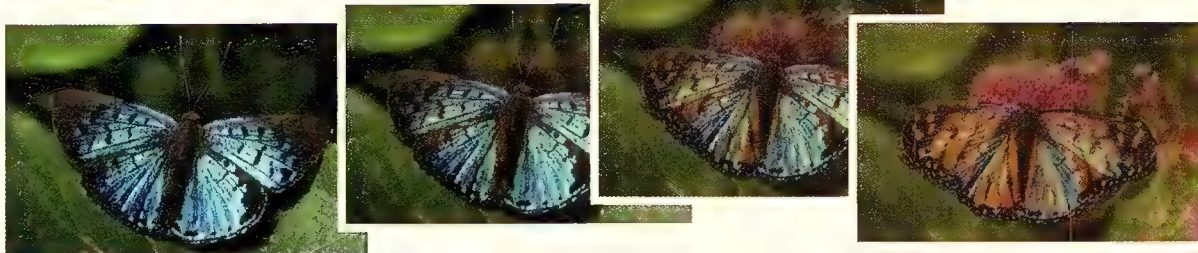
to end up using *Video for Windows*, which isn't bad on a fast machine – but if your PC can't manage a good frame size, it won't do the effects justice. The examples are in 320 x 240 pixels, which is passable – the maximum size *Video for Windows* can manage is 640 x 480, but don't expect very good playback on all but state-of-the-art PCs.

Considering how sophisticated the effects are, creating them is easy. Load in your source images, one for warping and two for morphing, then define the shapes on your image. There are Bezier curves, ellipses, boxes and lines which you use to distort your images. When warping, you use one source image, and use various shapes to define the distortion – for example, a small circle joined to a larger circle to create a bulging effect. For morphing, it's a similar trick but you have two images, and you define how the first gradually changes into the second. Good morphing takes a bit of time – the better the correlation the better the morph – you need to spend a fair amount of time matching up your curves.

Elastic Reality has a single screen, and you can use a slider to fade between the original and finished images. Once you've defined a set of curves, you can hide them while you work on the next set, otherwise the screen soon dissolves into a mass of lines. The powerful zoom comes in very

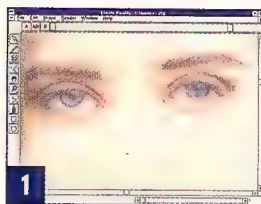
Morphing magic

The better the match of your source images, the better the morph. The most impressive effect occurs when objects appear to transform by changing shape, rather than fading together by changing colours



Rubber face

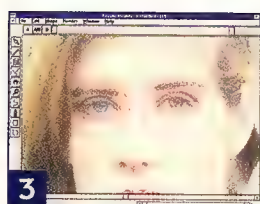
The astonishing warping effects are extremely easy to do and terrific fun to boot. Here's a very quick and totally unflattering eye bulge. When you get more expert, there are a wealth of tweaks and parameters to play with – but for extremely quick and powerful warping, it's a breeze...



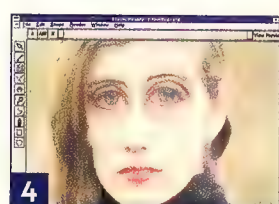
After loading in your image, you can start defining the warp shapes. This lucky model's going to have attractive bulging eyes, so start by zooming in, using the ellipse tool from the toolbar to draw two shapes over each eye. These are the starting positions for your warp.



From the Output Options dialog box define the number of frames over which you want the warp to occur, file format and other bits and bobs. By default the result's the same size as the source image, but you can change that – Video for Windows can't handle large frame sizes.



Duplicate each ellipse and stretch them out – these are the finishing points for your warp. Now all that's left to do is join both ellipses together. This you do by selecting first the inner one and then the outer one and selecting Join. Simple... but very ugly.

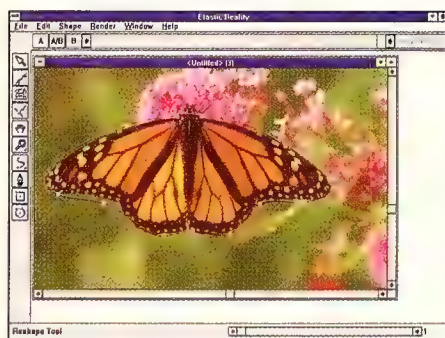


To preview your effect, move the slider at the bottom of the screen to the frame you want and select Render Preview from the Render menu. If you like it, select Render Full Effect and off it goes, writing your new creation to the hard drive. The results are stunning or, at the least, very weird.

Reality

handy, too. Once you've defined and joined your shapes, you can preview the effect in wire frame or render a single screen before committing yourself. Even at the highest quality setting, rendering is quick. You can do a lot with the package with very little reference to the manual. Getting into the nuts and bolts takes longer – there are some complex procedures. One useful function is the border, which you use to restrict the effects to a defined area of the image – by default the whole image bends when you warp any part of it.

And it doesn't stop there. Along with the distorting effects, *Elastic Reality* has a good stab at



◆ Getting a good morph is all about matching up the key points from each image. *Elastic Reality* uses Bezier curves, rather than the more usual series of single points. Time taken drawing the curves is well-spent, as it increases the quality of the final result no end

animation. Using the cookie-cut option you can define an area of the screen and then warp it as normal, setting the finishing point anywhere you like. The shape is cut out from the background. The net result is an image you can move about the screen as it's warped. Add a background and you've got animation – you don't have to add any warping, it can be used to create simple moving images. Use a series of keyframes to build up complex sequences.

You create composite images using a similar method – you define the area you want to keep and the image joins to your background. You can use travelling mattes, and black and white masks used to define the area to be overlaid. The obvious effect using this one is to film an actor flailing about and superimpose it over an aerial shot to create the illusion of flying.

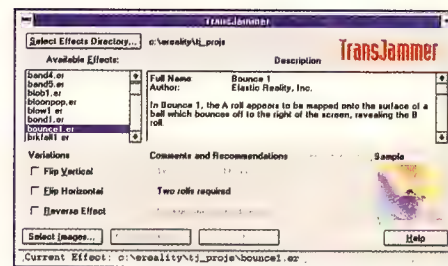
Elastic Reality is a really magnificent program. As a creator of special effects for video, multimedia, DTP and the rest, it's superb. The effects possible are incredible and playing about with them is terrific fun. It isn't the kind of thing you buy just to have fun with, however, unless you have a state-of-the-art wallet, of course. While at first it's too much to resist and has you opting for outlandish warps and morphing which screams digital power, it can also be used for more subtle and professional tweaking and tinkering. But it isn't cheap and that's the problem – you have to be serious about the subject to go for it. **PC ANSWERS**



Transformations

Bundled with the package is *TransJammer*, a package for the creation of transitions between video sequences or images. There are over 30 different effects provided, each with variations – you can buy extra ones, too. It's simplicity itself to use. You select the start and finish image or video sequence and then pick your effect, define the output format and then click on Go. A new animation is created.

All the effects are anti-aliased to give smooth edges. The range includes the standard ones you'd expect – such as dissolve, band slide and wipes – while among the more fanciful ones are bounce, where one image is reduced to a ball and bounced off the screen, and Kiki, where a dancing figure reveals the second image with a sweep of her arms. It's a useful extra which enables you to add your sequences together into a video, but you still need a proper digital video editor if you want to get serious about editing.



The opposition



PhotoMorph 2.0

Contact: LTS
Number: 01386 792617
Price: £116.33

A superb morphing package at a very reasonable price. It's doesn't do the warp trick, but for straight morphing on still and moving images it takes a lot of beating.

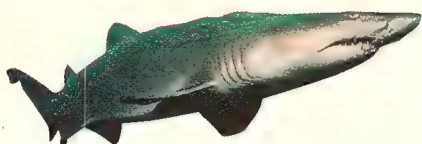
PC Answers Rating 85%

Elastic Reality

Contact: Softline
Number: 0181 4011234
Price: £292.58
Minimum hardware: 386 with 4Mb Ram
PC Answers Rating

84%

CD-ROM Today



Next issue



Go wild with our pick of the best new animal wildlife discs for the PC, discover the future of digital art galleries, and check out this summer's hottest new games.

Don't miss the Savage August edition of Britain's best-selling multimedia magazine!

**On sale from
20th July**



Business information faster, cheaper and better than you ever thought possible



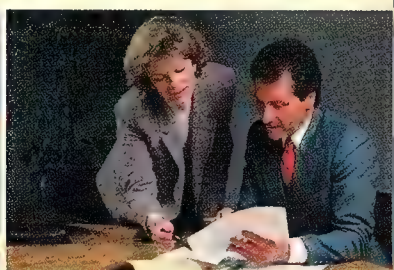
for the Director



for the Accountant



for the Sales Exec



for the P.A.

It's true – now there's a new and better way for you to get the information you need in business every day, whatever your job. It's fast, it's up-to-the-minute and it's all accessible from your PC - instantly. It's Tel-Me the first on-line information service designed for your PC,

Tel-Me

The first on-line information service designed for your PC

Tel-Me About it!

– 30 days FREE trial will tell you all you need to know.
Call: 0800 991155 or E-Mail: telmeinfo@telme.com

On-line to Save Time

Get the latest news instantly, find phone numbers faster, avoid jams with up to the minute traffic reports. See details on 900,000 companies, choose where to stay, eat or visit - anywhere in the U.K.. Then plan your journey - right down to street level. Because it's all on-line, it's all up to date - and it saves you time and money.

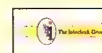
Faster and better

Tel-Me lets your PC do the hard work, so searches take a few seconds and Tel-Me's "Hardly On-Line" technology keeps your phone bill right down. And Tel-Me gives you FREE Internet E-Mail. Being on-line has never been easier or better value.

Take a Test Drive

Find out more today by calling us for your FREE Information Pack, FREE "Guide to Getting On-Line" and details of how you can take Tel-Me for a FREE 30-day Test Drive. And see how more and more businesses are gaining from faster, cheaper and better information - instantly.

Tel-Me gives you instant access to on-line information from:



YES, Please send my Free information pack ☐
Free Test Drive offer ☐
Free Guide to Getting On-Line ☐ (tick as appropriate)

Name _____ Title (Mr, Ms, etc.) _____
Position _____
Company _____
Address _____
Postcode _____ Tel _____

EPIC MARKETING

CD ROM SOFTWARE



CLASSIC COLLECTION
Includes Deluxe Strip poker 1 & 2, Centrefold squares, & Jigsaw pinups. A great one for Adults. (CD91) £29.99



SPACE & ASTRONOMY
Hundreds of NASA picture files, as well as text files from NASA dated back to 1964 (CD15) £19.99



201 WINDOWS GAMES
Contains over 200 great Windows games, Puzzles, Strategy, Arcade, etc Great value at just £9.99 (CD94)



PC LIBRARY CDROM
Thousands of Dos & Windows programs, Games & Utilities. Complete with a 50 page book. (CD112) £24.99



ILLUSIONS 3D
Includes hundreds of pre rendered 3D images as well as tools to make your own fascinating 3D images. (CD54) £9.99



PRO .GIF COLOUR ART
Over 5,000 full colour Professional quality images covering a wide range of subjects Great for DTP work. (CD16) £19.99



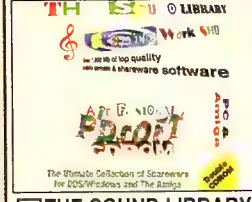
LUCKY DIP Vol.1
Games, Demos, Tools, Clipart, Fonts, Music modules, Sound samples, and loads more. (CD49) £5.00



ESSENTIAL UTILITIES
Hundreds of the most useful tools for DOS & Windows Graphics tools, music tools, Disk tools etc, etc. (CD74) £9.99



COVER GIRL POKER
Features 8 soundtracks, superb graphics & choice of languages. A great game for all Adults. (CD07) £19.99



THE SOUND LIBRARY
THE SOUND & GRAPHICS LIBRARY. A two CD set of sounds, samples, Images and tools (CD108) £19.99



GFX SENSATION
Over 100mb of Imagine objects, hundreds of textures and loads of objects for lightwave (CD02) £19.99



PRO PCX CLIPART 2
A fantastic new CD containing thousands of clipart images in PCX format Includes 250page book. (CD110) £24.99



STAR TREK MULTIMEDIA GOLD
Contains tons of pictures in BMP, GIF, IFF & JPEG. Hundreds of sound files, Animations in FLI, FLC, and Anim. The theme tunes from the original Star Trek as well as The Next Generation and loads more. (CD04) Only £27.99



PROFESSIONAL WINDOWS WALLPAPER COLLECTION
1000 of the very best Windows Bitmaps. Images include: Over 500 Girl pictures, Landscapes, Textures, fantasy scenes, seasons, classic & prestige cars, Animals, Aircraft, etc. (CD111) £12.99



Sports Illustrated SWIMSUIT CALENDAR Includes FREE GIFT
Make your own customized calendars. Features 70 of the world's most beautiful women, full 300page manual, Imports any BMP file. You not only have a diary on your Windows but you can also printout/make custom calendars. (CD105) Only £21.99



WS ANIMATIONS
A 2 disc set of thousands of animation files in FLI, FLC & Anim. Includes play-ers for DOS & Windows. (CD72) £19.99



SUPER CDROM BUNDLE!
10 CDROMS !!! All feature a different subject of images. Money, Props, World view, Business, etc (CD106) £19.99



SEXY SOUNDS
A bit of a novelty. This is an Audio CD containing various music track accompanied by rather naughty samples. £7.99



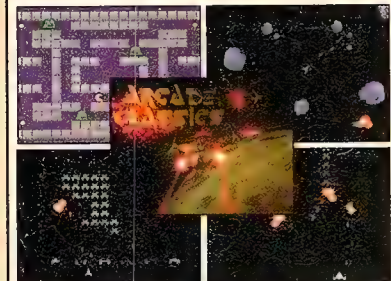
DELUXE STRIP POKER
5 card draw poker. Play against 3 gorgeous opponents who are willing and able "to beat the pants off you". £9.99



HOTTEST PC MEGA-DEMOS
Contains all the latest and best amazing mega music & graphics demos on the PC (CD107) £19.99



WS FONTS
Over 2,000 TrueType and Adobe fonts for Windows. An excellent value CD. (CD22) £9.99



ARCADE CLASSICS CD
Classic arcade games, Pacman, Frogger, Asteroids, Space Invaders, Centipede, Missile Command, Q-Bert, & Omega Race etc. Order code: CDARC-76 only £9.99



ADULT SENSATION
Over 4000 full colour .GIF images of beautiful women. Viewers & graphics converters for Dos & Windows are included. Order code: CDADS-01 £19.99



SPECCY SENSATION
Over 500 classic spectrum games ready to run on one CD on your PC. Includes various emulators for the PC & Amiga. Great fun.... Order code: CDSPS-03 £14.99



WORLD OF CLIPART
A superb value double CD title containing around 40,000 PCX, BMP, GIF, TIF, EPS colour & mono clipart images. Over 100 different subjects covered. CDWC07-77 £17.99

EPIC Marketing
Victoria Centre
138 Victoria Rd,
Swindon, Wilts.
SN1 3BU, UK

Mail Order Hotline.

01793 514188



Fax Order line.

01793 514187



E MAIL: epic@epma.demon.co.uk

Name _____
Address _____
PC Model _____
Payment Method _____
Credit card number _____
Exp date _____
Recommended PC configuration. 386 or 486, SVGA Monitor, 4mb Ram.

ORDER VALUE		
Please send me..		
Total goods value	£.	
Postage & Packing	£.	
Amount enclosed	£.	

OVERSEAS ORDERS
Overseas orders are welcome, please add £2.00 per CD.
COLLECTING YOUR ORDER
You are welcome to collect your order from any time between 9:30am - 5:30pm Monday - Saturday.
ORDERING BY POST
Simply send us your order, listing the items you require, the total cost, and your name & address with payment either by cheque or Postal Order, payable to EPIC MARKETING
ORDERING OVER THE PHONE
Call any time between 9:30 & 5:30 Monday - Saturday with your Credit card details and the items you would like to order.
POSTAGE & PACKING
UK & Mainland. add a total of £1.00 per CD.

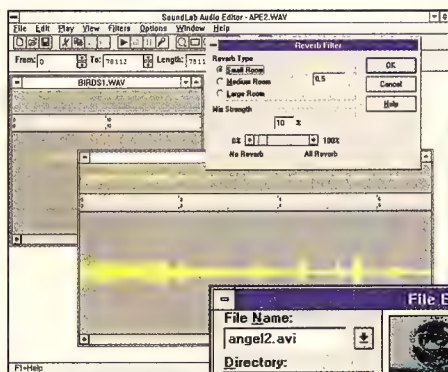
CONDITIONS OF SALE
Goods are not sold on a trial basis. E&OE.
TECHNICAL SUPPORT
With a dedicated Technical support line we offer 3 free technical support to all our customers on all our ware titles
SATISFACTION GUARANTEED
Over 90% of orders are processed within 48hours.
FREE LUCKY-DIP CDROM
(CONTAINS GAMES, DEMOS, TOOL CLIPART, SAMPLES ETC.)
WITH ALL ORDERS OVER £25.00

Autodesk Animator Studio

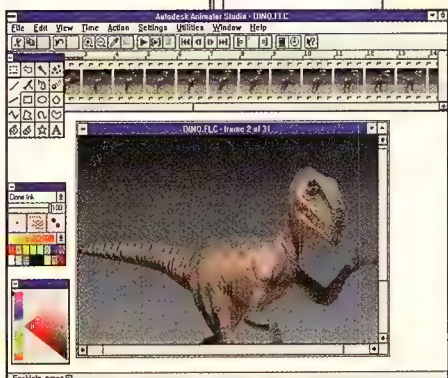
An old hand has finally made the jump to Windows. Chris Lloyd looks at one of the animation heavyweights

Anything that moves is rude. The censorship laws used to allow for a tableaux featuring the naked breast, but everything had to stay still, because, basically a moving image is sexier than a still one. Autodesk Animator Studio is a complete 2D animation package with an enormous collection of tools to turn your PC into a digital video work-

◆ SoundLab enables you to add that extra, vital dimension, sound. You can record in realtime, stretch or condense to suit and use filters and special effects, and all in 16-bit, of course



◆ The browser enables you to – er, browse through the 400Mb of media clips supplied. There are some fantastic examples of the animator's art to plunder



◆ PC animation at its best. This dinosaur is incredible, but, unfortunately, it moves more like a snail unless you have a powerful PC. This originally started life as a 3D Studio creation

station – you can paint directly on to your images for starters. The previous version, *Animator Pro*, ran under DOS, but *Studio* makes the jump into Windows and adds 24-bit colour and a few other goodies in the process.

Once you've installed it, there are four new icons to click on. Apart from the animation program itself, there's *SoundLab* for editing the sound track, *Scriptor* which creates script files used to play sequences of animation, sounds and pictures, and the *Player* program which is pretty self-explanatory. Your animation can be created in either Autodesk's own formats, .FLC and .FLI, or Video for Windows and Quicktime formats. All the internal work is done in 24-bit colour, along with an 8-bit alpha channel, even if you save and load as 256 colour clips.

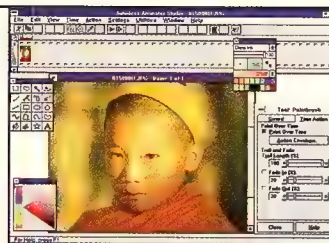
You can approach the process in much the same way as traditional film animation, creating backgrounds and animating sprites over the top. Sprites are static or moving pictures that you use as floating objects, overlaying them on to your

frames. Any section of an image can be used as a sprite, and can be animated – moving position, colour and even shape – across your frames. You cut out the object and then define its movement path across the frame. You can also warp entire frames by using a grid to define all the new shapes.

Your painting tools include the

standards such as paintbrush, airbrush and polygons. You also get a clutch of image processing tools including gradient fills, contrast, brightness and a host of more esoteric ones. You can even stretch, distort and scroll your titles. The onion-skinning feature enables you to overlay images in a similar way to traditional drawn animation, and you can use previous frames as a reference.

The hardware specification for all this magic is hefty. You need lots and lots of RAM for a start – 16Mb is recommended, but 32Mb is more like it. Using the minimum of 8Mb you're limited to animation of 320 x 240 pixels. A graphics card capable of 16 or 24-bit display is also well worth



◆ The painting power of Animator is copious. You can load and save in all the major picture formats and buried away in menus and icons are masses of clever techniques.



◆ All ready to pull the blue screen stunt. One image is overlaid on another using a key colour – blue – to define the transparency

it. The code is optimised for a Pentium, which is also recommended. Try and run it on anything less than a very tasty machine and you'll get frustrated rather quickly – it's like swimming through treacle. You know it's serious about things when you find that the slider for setting the movie length goes up to – gulp – 10,000 frames.

Animator is one of those programs that you can spend months learning and, even then, still miss a trick or two. At times it seems too clever for its own good. There are a series of detailed tutorials to guide you through your early experiments. It's not the most intuitive package in the world and takes some mastering, but the biggest problem is the price – it's horrifically expensive. It doesn't do the job of a full-blown editor of the finished clips, either. It's good but the laws of diminishing returns are in full effect. **PC ANSWERS**

The opposition

Adobe Premiere 4.0
Contact: Simply Computers
Number: 0181-498 2120
Price: £468.83

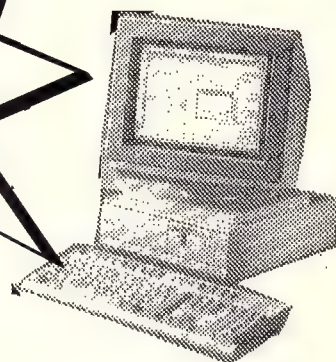
A digital video editor that includes tons of special effects, including overlaying animation to produce 2D animation. It's a very competent and powerful package. Shop around and you can buy previous versions at a considerable discount, too.

PC Answers Rating 87%

Autodesk Animator Studio

Contact: Autodesk
Number: 01483 303322
Price: £581.63
Minimum hardware: 66MHz 486 with 8Mb RAM
PC Answers Rating 76%

LET US CUSTOM
BUILD YOUR
SYSTEM TO YOUR
SPECIFICATIONS



486 DX2 66

256K CACHE

4MB RAM

540MB HDD

14" SVGA 0.28

ENHANCED KEYBOARD

SERIAL MOUSE

£494

(£580.45 INC VAT)

PENTIUM 60

8MB RAM

1.2GB HDD

256K CACHE

540 MB HDD

14" SVGA 0.28

ENHANCED KEYBOARD

SERIAL MOUSE

£1014

(£1191.45 INC VAT)

486 DX4 100

256K CACHE

4MB RAM

540MB HDD

14" SVGA 0.28

ENHANCED KEYBOARD

SERIAL MOUSE

£544

(£639.20 INC VAT)

PENTIUM 90

8MB RAM

1.2GB HDD

256K CACHE

14" SVGA 0.28

ENHANCED KEYBOARD

SERIAL MOUSE

£1144

(£1344.20 INC VAT)

PENTIUM 120
£P.O.A.

MULTIMEDIA UPGRADE

16 BIT SOUND CARD

2xCD ROM

£139 (£158.62)

16 BIT SOUND CARD

4xCD ROM

£179 (£210.32)

MEGA BASS & TREBLE 80w

AMP SPEAKERS

£35 (£41.12)

INTERNET READY UPGRADE

*14,400 MODEM / 14,400 FAX

£60 (£70.50)

*28,000 MODEM / 14,400 FAX

£119 (£139.82)

D.I.Y. UPGRADES

DX2 66 CPU & M/BOARD

£110 (£129.25)

DX4 100 CPU & M/BOARD

£155 (£182.12)

FREE CASE UPGRADE TO

MINI TOWER OR S/LINE DESKTOP

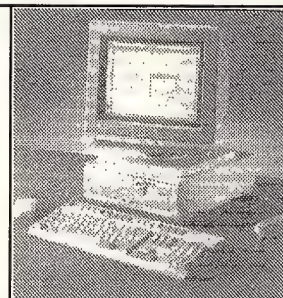
CALL YOUR NEAREST

SHOWROOM FOR

ANY UPGRADE

REQUIREMENTS

*Non BABT Approved



**1 YEAR
ON-SITE
WARRANTY
INCLUDED
WITH EVERY
SYSTEM
FREE**

PCI AND VLB
UPGRADES
RING FOR
PRICES

IN SYSTEMS

HEAD OFFICE

TEL 0121-753-3950

FAX 0121-753-3951

SHOWROOMS

TEL 0181-220-4444

FAX 0181-220-0202

TEL 0181-893-5558

FAX 0181-893-5545

TEL 0181-807-9202

FAX 0181-807-9203

BIRMINGHAM

E LONDON

W LONDON

N LONDON

MicroLOGIC

◆ Display your music with traditional music notation and a reservoir of symbols and signs, in the Score editor

Another MIDI sequencer? More of the same, or something a little different? Dave Robinson looks at *MicroLOGIC*

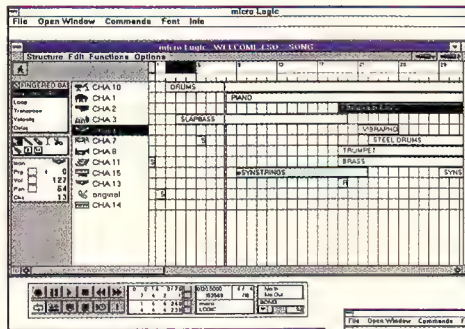
Making music on the PC, presuming you already have a soundcard, requires one major software ingredient: a sequencer.

This cunning invention enables you to input, edit and play music, as if you were recording it to tape; but, of course, the music is stored only as temporary data in your PC, so you have total control over your compositions. And if you have a MIDI interface somewhere in your system, you can play music into your sequencer from a piano-style keyboard, and then communicate with a whole studio full of synthesizers and samplers...

The company behind *MicroLOGIC*, Emagic, is one of the two biggest names in MIDI sequencing in Europe, and has been for several years, in one guise or another. *Notator*, Emagic's top notation and sequencing package – and its non-notating brother *Creator* – is still the principal toolset for many PC-based musicians. So here's its entry-level enticer, and it's pretty macro for a micro.

The backbone to most MIDI sequencing packages is practically set in stone. The main workbench is an Arrangement screen, mapping where instruments play – and where they don't – along a time axis. You see the whole song before you start and you know what happens and when.

From the Arrangement screen, you have access to three editors. First, there's the Matrix editor, where notes appear as beams on an old-style piano roll – an essential resource if you've no formal music training. Then there's the Events editor, a blaze of numbers and codes, describing every last drib of musical data, and finally the Score editor, the place where traditional spidery notation hangs out – more on that later. *MicroLOGIC* has all of those, so most manipulation



◆ Ground control for *MicroLOGIC*. The Arrange page is where your song is planned, plotted and performed

needs are catered for. It doesn't have a Drum editor – one specifically designed around percussion and the way you write for it – but it'd be cheeky to ask for one at this price.

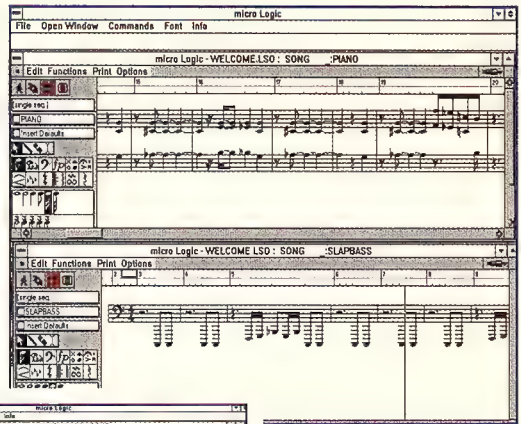
Where *MicroLOGIC* does try to break the mould is in its Object Orientated approach. With an appropriate soundcard/tone module, you don't need to fiddle about finding, say, a piano sound. On whatever track you choose to record, you simply click on the instrument column, and a dazzling string of icons – nay, objects – appears. Select a piano, and bingo – that track will be configured to plink and plonk as you'd expect. The OO idea makes for friendly, facile and fast music-making.

The score editor is the gateway to a fulsome WYSIWYG notation package. Assemble your music, align the staves with practical clefs, dynamic markings – purely cosmetic ones, mind – and other necessities, then print it out and present it to your local light opera group. The notation functionality is hard to match at this price, though the writers of the manual don't tell you what the oft-mentioned Levels button is (hint: top corner, next to the Edit menu).

The screen quickly becomes cluttered with window noise when using Score edit – this could discourage newcomers. Object Orientation can turn into Rapid Disorientation. Active management of the windows, or the biggest monitor you can afford, is recommended here. Emagic try to help in small ways: windows close with a single click, and much is made of 'invisible sliders' (click on a parameter, move the mouse up to increase and down to decrease the value) to reduce screen furniture.

One more slight creativity-limiter is quantisation or Q – timing error correction. You can snap off-rhythm events to a variety of hard settings – sixteenth, triplets, whatever. There's no 'iterative Q' – compromise between hard Q and natural Q – which retains some human feel but removes glaring errors. Iterative Q would be so handy.

There are several other bonuses, all rapidly becoming de rigueur but worth a mention anyway.



◆ One of the drawbacks of *MicroLOGIC* – the screen soon becomes choked with a confusing array of windows.

The MIDI mixer enables you to take control over pan (position in the stereo field) mute and volume, portamento – this one's a real

novelty – and, if you've got a General MIDI soundcard, the amount of reverb and chorus, too. It's quite a goody bag if you're using a sound source with a minimum of front end access. You can alter the metronome settings in just an instant and add various tempo changes throughout the song – there's even a pop-down reminder of the hot keys, ready for your rapid apotheosis into a power sequencing supremo.

MicroLOGIC is a definite winner. It's straightforward with a few, quickly dispelled quirks, and loaded with functions for both the beginner and the more demanding musician. The logical choice? **PC ANSWERS**



You can find the demo of *MicroLOGIC* on the CD-ROM

The opposition

Cubasis

Contact: Harman Audio
Number: 0181-207 5050
Price: £149

Emagic's long time big rival, Steinberg, has an entry-level package with a spec very close to *MicroLOGIC*. *Cubasis* has the same basic editors, but lacks the Object Orientated approach. And it's £50 more expensive...

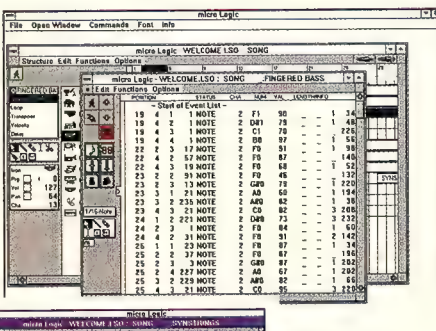
PC Answers Rating 70%

MicroLOGIC

Contact: Sound Technology
Tel: 01462 480000
Price: £99
Minimum hardware: 386 with 4MB RAM

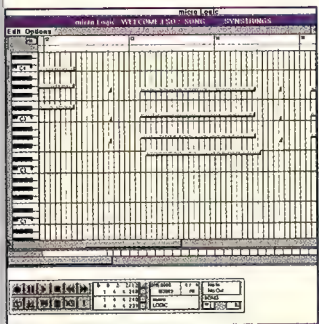
PC Answers Rating

79%



◆ A piano roll with lines all over it. That's the Matrix editor, a vital organ for notation virgins

◆ In the Event editor, everything, every single piece of data, is proffered for your tweaking pleasure



QuickTax '95

Six million of us will fill out tax forms this year and it's usually a troublesome business. *QuickTax* aims to make it as painless as possible and points out tips and tricks to minimise your tax burden on the way. Each year the tax laws are different, so, accordingly, there are annual versions of *QuickTax*.

There are two ways of tackling the form: you can fill it out piecemeal – typing in any section as you see fit – or you can go for the interview. The latter is the strong point of

In interview mode you're taken through the form one question at a time until it's completed – a neat solution

QuickTax, taking you through the form one question at a time until it's completed. It's a neat solution – you can stop and start at any point and

there's lots of help, notes and hints to ease you through. A little bar shows exactly how far through the interview you are.

At the end of it all, you get a tax assessment which details all the ins and outs and gives you the bottom figure and whether you've paid too much or too little tax. The final form it prints out is a copy of the real thing and can be sent straight to

◆ The *QuickTax* interview runs you through a facsimile of a tax return, using refreshingly easy questions. Copious notes are neatly arranged in the right sections

the taxman. You get the notes and text from the real form, with explanations in plainer English.

Having completed your tax form, you can experiment with 'what if?' scenarios, altering allowances to see how it effects your final bill. The manual's clear and thin, reflecting the program's accessibility. You can import last year's form from the previous version of *QuickTax* as well as data from *Quicken*, the account package from the same people. You can get a discount of £16 if you used last year's model or any other Intuit package.

This is a program you're going to use once for a couple of hours. If you're self-employed or

◆ At the end of your form-filling session you get a quick tax estimate that lays all the figures out for you, including that all-important final figure. Gulp

fill out more complex returns, then you probably employ an accountant to do the job. This means you're used to paying out roughly £200 for the service – why not save yourself a bundle straight off? *QuickTax* is a well produced and carefully thought out program, the ideal solution for tax headaches that can develop into migraines.

QuickTax '95
 Contact: Intuit
 Number: 0800 585058
 Price: £49.95
 Minimum hardware: 386 with 4Mb RAM, printer
PC Answers Rating 81%

TaxCalc '95

The Independent Financial Advisers estimates in a recent report that three out of four adults pay £170 more tax than is necessary. If you're faced with a tax form to fill out, it could be well worth your while to get it right. *TaxCalc* takes advantage of the Inland Revenue's move to modernise the tax system. It's an electronic tax form your PC helps you fill out and which you can then print, sign and submit as your finished return.

The installation is incredibly slow, so slow that at times it looks for all the world as if your PC

The installation is incredibly slow, so slow that at times it looks for all the world as if your PC has crashed

has crashed. Hardly an auspicious start. You can be taken through the complexity of the form in an interview, which presents you with a series of

entries to fill in until it's all completed, or you can choose to flip to any section and fill the form out in any order you want.

There's a handy hint bar at the bottom which tells you what you should be entering when you move the cursor over a form entry. The help is, overall, comprehensive – although it's sometimes a bit difficult to follow. Clicking the right mouse

button opens the help system at the relevant section. It can still take a bit of hunting to find the help you need, though. The tax saver offers hints at saving tax when you've completed your initial form.

More and more people are interested in self-assessment. For most the process is simple enough, but if your tax position is more complex the kind of help *TaxCalc* and programs like it offer is invaluable. While *TaxCalc* has all the basics necessary for tackling the job by yourself, it's let down too often. For a start, it's not exactly bug-free. Select the wrong option and you can end up with a crash that throws you out of the program altogether.

Editing your entries is also awkward. And there is no data verification – you can type absolutely anything into the fields and it doesn't complain, so you need to perform a thorough error-check yourself. It's almost as if it hasn't been finished yet – *TaxCalc* needs to be polished considerably before it can compete with the likes of the professional *QuickTax*.

◆ *TaxCalc*'s help is provided in the standard Windows format, and you also get a neat little glossary. Some of the explanations are difficult to follow though, plainer English in places would be a bonus

◆ Your tax form is divided up into manageable sections which you can complete with the help notes. Much less daunting than a printed multi-page form

TaxCalc '95
 Contact: Consumers' Association
 Number: 0800 252100
 Price: £44.99
 Minimum hardware: 386 with 4Mb RAM, printer
PC Answers Rating 37%

EDUCATIONAL AND LEISURE PRODUCTS

PLEASE CALL FOR YOUR FREE CATALOGUE

 THE WAY THINGS WORK RRP £50 SAVE £13 VALUE DK. The Way Things Work £36.95	 RRP £30 SAVE £5 NEW RELEASE MS Explorapedia £24.95	 RRP £139 SAVE £59 GREAT VALUE Berlitz French/Spanish/Italian or German Only £79.95	 RRP £34 SAVE £4 NEW RELEASE Voyage Through Italy £29.95	 RRP £50 SAVE £12 NEW RELEASE DK. History of the World £37.95	 RRP £38 SAVE £22 SPECIAL Tuneland Only £15.95 Limited Stocks	 RRP £25 SAVE £5 GREAT GIFT Playboy Screen Saver £16.95	 RRP £25 SAVE £5 CHILDREN'S The Circus £29.95	 RRP £25 SAVE £5 CHILDREN'S Gus Goes to Cybertown £21.95	 RRP £25 SAVE £5 EDUCATION Learn To Use The Computer £26.95	 RRP £25 SAVE £5 COMBAT CLASSICS Includes F15 Strike Eagle, Team Yankee and 688 Sub Attack. Only £19.95
 100 YEARS OF MOTORING NEW RELEASE 100 Years of Motoring £36.95	 RRP £49 SAVE £17 SPECIAL Hutchinson's Encycl. '95 £32.95	 RRP £33 SAVE £6 NEW PB Bears Birthday Party £26.95	 RRP £34 SAVE £4 NEW RELEASE MS Flight Sim 5.1 £28.95	 RRP £50 SAVE £12 NEW RELEASE DK. Encyl. Of Nature £37.95	 RRP £50 SAVE £12 TOP TITLE How Things Work in a Busy Town £29.95	 RRP £41 SAVE £8 NEW RELEASE Ann Hooper Ult. Sex Disc £32.95	 RRP £41 SAVE £8 OUTSTANDING VALUE MS Encarta £49.95	 RRP £25 SAVE £5 CHILDREN'S Corel Wild Cards £24.95	 RRP £25 SAVE £5 STUNNING Le Louvre £31.95	 RRP £25 SAVE £5 SPORTS MASTERS COMPILATION Includes Indianapolis 500, Advantage Tennis, PGA Tour Golf and European Championship Football. Only £19.95

REFERENCE AND EDUCATION

3D Atlas)	36.95
100 Years of Motoring NEW	36.95
Bodyworks 4.0 NEW	25.95
Chambers English Dictionary	43.95
Compton's Encyclopedia '95	12.95
DK Encyclopedia Of History NEW	37.95
DK Encyclopedia Of Nature NEW	37.95
DK Encyclopedia of Science	36.95
DK Ultimate Human Body	36.95
DK World Reference Atlas NEW	43.95
Grolier Encyclopedia '95	12.95
Hutchinsons Encyclopedia '95 SAVE	32.95
Joy of Sex	22.95
Leonardo The Inventor NEW	16.95
Microsoft Ancient Lands	32.95
Microsoft Bookshelf 95	£CALL
Microsoft Cinemania 95	33.95
Microsoft Dangerous Creatures	33.95
Microsoft Dinosaurs	32.95
Microsoft Encarta 95	£CALL
Concise Oxford Dictionary VALUE	31.95
Oxford Compendium	45.95
Oxford Reference Shelf	45.95
Oxford Thesaurus	31.95

Please ask for details of other Oxford University Press publications on CD Rom Pleasures of Sex

ART & CULTURE

American Visions	NEW	28.95
China- A Grand Tour		29.95
Exotic Japan		31.95
Great Artists		31.95
Fellini	NEW	27.95
Impressionism		15.95
Microsoft Art Gallery		33.95
Michelangelo	NEW	29.95
Renaissance of Florence	NEW	29.95
Survey of Western Art		18.95
The Louvre	NEW	31.95
The Sistine Chapel	NEW	29.95
Van Gogh: Life and Works	NEW	29.95
Voyage In Egypt	NEW	29.95
Voyage Through Italy	NEW	29.95

LITERATURE

Greatest Books Collection	22.95
Great Mystery Classics	16.95
Marbeth	NEW CALL

Romeo and Juliet NEW
Shakespeare: The Complete Works

MUSIC

Beethoven 5
Beales: A Hard Days Night
Dylan: Highway 61 **NEW SPECIAL**
Introduction to Classical Music
Jazz: A Multimedia History **SAVE \$3**
Jazz Greats NEW
Jump - David Bowie
Microsoft Beethoven
Microsoft Mozart
Microsoft Musical Instruments
Microsoft Schubert
Microsoft Strauss
People: 20 Years of Pop
Prince Interactive
Rave Plus
Rhythm and Blues NEW
Tschakovsky's 1812 Overture
Viking Opera Guide **SPECIAL**
Woodstock
Xolara 1 Peter Gabriel

LANGUAGES

Asterix Leams French 2 Disc Set
Berlitz French
Also avail for German, Italian, Spanish
Global French (Also Avail for German,
Italian, Spanish)
Language Systems 4-9 years. French,
German, Spanish Japanese
Language Systems 9-Adult.
French and Spanish
Learn to Speak French 4
Also available for Spanish
Pronunciation Tutor- French NEW
Also available for German and Spanish

CHILDREN'S

3D Body Adventure (6+)
3D Bug Adventure (3 - 8)
3D Dinosaur Adventure (3-10)
10 out of 10 Please Call for Details
Alice in Wonderland NEW
Aladdin Activity Centre (5+)
Alge Blaster 3 (12+ Maths)
Around the World in 80 Days (5-8)
EA Kids Arts Centre (3+)
Arthur's Teacher Trouble (Unboxed)
Arthur's Birthday Surprise (3+)
Barney Goes to School (Ages 3+)

31.95	Barney Goes to Space (3+)
27.95	Bustynow (3-6)
	Bustynow - How Things Work
	Berenstein Bear
	Chadwick and The Sneaky Egg Thief
28.95	Counting on Frank (8-11)
21.95	Directors Lab
19.95	DK My First Amazing Dictionary
31.95	DK Stowaway (4+) VALUE
9.95	DK The Way Things Work (4+)
24.95	Fisher Price A,B,C's (3-5)
25.95	Fisher Price 1,2,3's (3-5)
34.95	Firefighter NEW
34.95	Freddie Fish
34.95	Fun School 5 in Dreamland
34.95	Fun School 5 in Space
34.95	Fun School 5 in Time
16.95	Fun School Paint & Create New
21.95	Fun School Maths
24.95	Fun School Spelling
19.95	Horry and The Haunted House
28.95	Jungle Book (5-8)
31.95	Just Grandma & Me (Unboxed)
19.95	Little Monster at School (3+)
32.95	Lion King (4+)
	Kid Works 2 (3+)
	Kids Encyclopedia - Random House
	Magic Theatre (6+)
53.95	Magic Bus Tour Solar System (6-10)
79.95	Magic Bus Tour Human Body (6-10)
	Maths Workshop (Ages 4+)
37.95	Mario Titles (Call for Details)
	Microsoft Creative Writer
	Microsoft Fine Artist
19.95	Peter Pan Painting (4-8)
	PB Bears Birthday Party NEW
22.95	Putt Putt Joins The Parade (3+)
74.95	Putt Putt Goes To The Moon (3+)
	Ruff's Bone (3+)
39.95	Sesame Street Letters (3-6)
	Sesame Street Numbers (3-6)
	Sesame Street Words (3-6)
	Teddys Big Day (3+)
	Teddy's Hide and Seek (3+)
27.95	Teddy's Great Adventure (3+)
27.95	The Tortoise and The Hare (3+)
27.95	Thumbelina (4-10)
16.95	Tuneland (3+) SAVE £22
15.95	The Circus
24.95	The Ultimate Haunted House
27.95	Zoo Qanils NEW

GAMES

Award Winners Compilation
(Includes Lemmings, Civilization, Frontier Elite)

14.95	Air Warrior Plus	NEW	24.95
£CALL	Apache Longbow		£CALL
29.95	7th Guest		13.95
£CALL	Armoured Fist		34.95
19.95	Basic Bridge	NEW	26.95
27.95	(Please call for details of other Bridge Programmes)		
£CALL	Battle Chess		27.95
26.95	Bioforge		33.95
26.95	Bloodwings Pumpkins Revenge		33.95
36.95	Commander Blood		17.95
22.95	Commando Max Overkill		18.95
22.95	Creature Shock		31.95
17.95	Dark Forces	SPECIAL	28.95
27.95	Down Patrol	SAVING	19.95
18.95	Desert Strike		15.95
18.95	Disc World		31.95
18.95	Doom II	REDUCTION	26.95
16.95	Dreadnoughts		24.95
16.95	Ecstafica R18		28.95
16.95	Flight Unlimited		29.95
27.95	Full Throttle	NEW	32.95
27.95	Hi Octane	NEW	33.95
9.95	Indy Car Racing		7.95
26.95	Journeymen Project Turbo		15.95
27.95	Jungle Strike		15.95
27.95	Jutland		15.95
28.95	Klik & Play		27.95
27.50	Links Pro 386		24.95
31.95	Little Big Adventure		31.95
31.95	Lost Eden	NEW	24.95
28.95	Mad Dog McCree II		15.95
16.95	Magic Carpet		27.95
31.95	Megarace		15.95
31.95	Mikro Machines 2		£CALL
27.95	Monny Phynx Complete Waste of Time		27.95
26.95	Myst (Call for Version Price)		24.95
23.95	NASCAR Racing		18.95
26.95	Pinball Fantasies Deluxe	NEW	£CALL
26.95	Psycho Pinball	NEW	31.95
26.95	Rebel Assault		26.95
26.95	Return to Zork		26.95
26.95	Sam and Max	REDUCTION	19.95
19.95	Sim City Enhanced	REDUCTION	10.95
19.95	Sim Tower	NEW	£CALL
22.95	Slipstream 5000	NEW	£CALL
27.95	Star Trek Technical Manual	SAVE	27.95
25.95	Star Trek: A Final Unity		32.95
15.95	Subwars 2050		12.95
29.95	Tank Commanders		£CALL
31.95	Theme Park		28.95
24.95	Transport Tycoon		26.95
	Under A Killing Moon	REDUCTION	24.95
	US Navy Fighters		32.95
	Virtual Chess	NEW	£CALL
19.95	Virtual Pool	NEW	£CALL
	Wing Commander III		34.95

SPORT

FIFA Soccer	26.95
International Tennis Open	21.95
NBA Live 95	33.95
NHL Hockey 95	27.95
PGA Tour 486 Golf	28.95
Rugby	28.95
World Class Rugby 95	16.95

HOME AND HOBBY

Astrology	£CALL
Complete Workshop	9.95
Complete World Bartender Guide	9.95
Cookbook Heaven 2	12.95
BH & G Healthy Cooking	18.95
Family Doctor	14.95
Gardening	9.95
Key Garden Planner	23.95
Mayo Clinic Family Health	14.95
Microsoft Works 3.0	39.95
Microsoft Wine Guide	35.95
Pharmacist SPECIAL	19.95
Prescription Drugs	12.95
Total Health Body and Mind	31.95
Wines of the World SAVE £3	16.95

DTP

Clipart Warehouse	12.95
Clipart Heaven 2	19.95
Corel Gallery	29.95
Corel Gallery 2	56.95
Corel Draw 3.0	49.95
Corel Draw 4.0	108.95
Fonts Platinum	12.95
Gifts Galore	16.95
Kodak Photo CD Access	14.95

SCIENCE

A Brief History of Time	31.95
Chemistry Set	£CALL
Biosphere	48.95
Electricity and Magnetism	29.95
Interactive Periodic Table NEW PRICE	31.95
Interactive Space Encyclopaedia	32.95
Redshift	28.95
Sharks	29.95
Space & Astronomy	18.95
Science Adventure	27.95
The Discoverers	£CALL
NEW TITLES ARRIVING DAILY PLEASE CALL FOR DETAILS	

Mon-Fri 9:00am-6:00pm, Sat 10:00am-2:00pm, Fax Line: 0171 351 6787 24Hrs.
We accept most major credit cards. Prices subject to change without notice. F & OF

DATATRADE MARKETING LIMITED 79 LOTS ROAD, LONDON SW10 0RN



LOCAL AUTHORITY AND SCHOOL ORDERS ACCEPTED

ORDER HOTLINE - OVER 1500 TITLES AVAILABLE

0171 352 2127

FREE DELIVERY on all orders over £30.00 excl. VAT.

PRICING Please add £1.50 / item for post and packaging for all orders under £30.00 excl. VAT. Please add VAT at 17.5% to all orders. We will not bill your credit card until your order is dispatched. Orders usually dispatched within 24 hours. You will be informed at the time of placing your order if despatch will be delayed and the expected despatch date. All parcels sent by recorded delivery.

SAVE £££'s ON PC REPAIRS

LEARN AT HOME TO BE AN EXPERT ON PC REPAIR

Earn extra cash too! Turn an interest into a well-paid profession. Take an easy to follow home-study course in PC Repair through ICS. Covers the Computer from basic power supplies through to major upgrades, preparing you for your own repair business or for DIY repairs. ICS has over 100 years experience in home-study courses and is the largest Distance Training organisation in the world. You learn at your own pace, when and where you want under the guidance of expert tutors from the field of Computer Repair and Maintenance.

Find out how we can help you. Post or phone TODAY for FREE INFORMATION - without obligation.

**FOR FREE INFORMATION
PHONE 0141 2217373 NOW!
or POST THE COUPON
BELOW TODAY!**

Please send me my FREE INFORMATION PACK on the ICS PC Repair Course.

MR/MRS/MISS: _____

ADDRESS: _____

P. Code _____

ICS

International Correspondence Schools, Dept CN065
312/314 High Street, Sutton, Surrey SM1 1PH.
Tel: 0141 221 7373 (24 hrs.) Fax 0141 2218151

CN095

**JUST UPGRADED FROM PCW or BBC etc?
COME TO THE EXPERTS FOR FAST EFFICIENT**

DATA TRANSFER & CONVERSION!

YOU MIGHT GET CHEAPER, BUT NOT BETTER SERVICE!

We have been converting data since 1987, and are not a 'fly by night' set up that can only convert your *LocoScript* files into *WordPerfect*, or worse still ASCII. We can convert into almost any word processing format on PC or Mac, and retain all your formatting codes (bold underlines, italics etc.) Most jobs done by return.

Transfer prices include Vat & carriage

**DISK TRANSFER [£3.95 1-4] [£3.45 5-9] [£3.25 10-19] then £2.50
FILE CONVERSION ONLY 15p (any size document)**

Don't call the cowboys, call the experts!

DYE SUBLIMATION COLOUR PRINTERS

Now you can print true photographic glossy prints from your PC, MAC or Amiga. Not to be confused with inkjet printers the PrimeraPro & Pictura printers by Fargo, produce output comparable to £10k printers. Ask about sample prints, you won't believe your eyes!!

Primera: £589, PrimeraPro: £1399, Pictura310[A3]: £3350

Hardware prices exclude Vat & carriage



**Panasonic
KXP4400
4ppm Laser
[led] printer
300dpi
£289**



Notebooks:

from 386 to DX4, prices from only £399, too many to list, phone for details and friendly advice!

S.C.S. 66a Eastgate, Hornsea, HU18 1LW.
Tel (01964) 535933 or (0585) 346462



Karlton



Special Offers

For a Limited Period

Karlton's Top Twenty

Microsoft Office 4.2	£259	Microsoft Office Pro	£359
Microsoft Word 6	£189	Lotus Smart Suite 3	£259
Microsoft Project 4	£249	Microsoft Excel 5	£189
Microsoft Access 2	£189	Microsoft Works 3	£69
MS Visual Basic Pro V3	£179	Lotus 123	£189
WordPerfect	£159	Lotus AmiPro	£69
MS Visual C++ Pro V2	£199	MS PowerPoint	£169
Harvard Graphics	£89	MS Encarta 95	£39
MS FoxPro 2.6	£69	Corel Draw 5.0	£279
Lotus Freelance Grph	£189	DBase 5	£169
MS Windows 3.11	£35	MS DOS 6.2	£35

Tel: 0181 778 0908 Fax: 0181 778 4886

Prices exclude delivery and VAT (17.5%) Delivery £7 + VAT.
Visa - MasterCard - EuroCard - Amex - COD

E & OE. Availability, Prices and Specifications are subject to change without notice.

All sales are subject to Karlton's Standard Conditions of Contract. Copies available on request.

Karlton Computers Limited

30 Metro Centre, Kangley Bridge Rd, London SE26 5BW
(Next to Lower Sydenham BR Station - 18 min from Charing Cross)



Karlton



XXX RED HOT CD ROM XXX

FOR THE LATEST IN ADULT ENTERTAINMENT ON YOUR PC WRITE, RING, OR FAX TODAY TO RECEIVE OUR **FREE** CATALOGUE OF ADULT PRODUCTS ON

CD ROM

ALL OF OUR PRODUCTS ARE DRAWN FROM THE WORLD OF EROTIC CD ROM RANGE AND EACH CD CONTAINS MORE THAN **500 MBYTE** OF EROTIC PICTURES AND MOVIES WHICH CAN BE SENT DIRECT TO YOUR HOME FROM OUR DISTRIBUTION CENTRE ON THE CONTINENT.

PLEASE NOTE THAT BOTH OUR CATALOGUE AND ALL OF OUR RANGE INCLUDES IMAGES OF AN ADULT NATURE WHICH WE WILL ONLY SUPPLY TO PEOPLE OF **18YRS** OR OVER.

ALL ENQUIRIES SHOULD BE MADE BY LETTER OR TELEPHONE TO:
57 WAVERLEY CRESCENT, HAROLD HILL, ROMFORD, ESSEX RM3 8AJ

TEL 01708 377511 FAX 01708 377522

NO PERSONAL CALLERS CAN BE DEALT WITH

XXX RED HOT CD ROM XXX

(18) Proof of age required.

We do not condone or supply illicit hard core material

Winstation 133

Your PC just not fast enough? Want to be on the cutting edge? If so, this is for you. The Winstation 133 from Red Box has a 133MHz Pentium, the newest and fastest PC processor. The rest of the machine is pretty jazzy, too – in fact, this is a pretty potent PC all round.

The state-of-the-art chip sits on an equally high-tech motherboard. It has Enhanced IDE on-board, Plug and Play BIOS, a Triton PCI chipset with four PCI slots, fast serial ports and 256K of pipelined cache designed to co-operate with the Pentium's pipelined processing. It's as good a motherboard as you can find anywhere. Add 16Mb of the latest EDO – Extended Data Out –

The monitor, a 17-inch Idek Vision Master, is truly superb. It can go to 1,600 x 1,200 pixels and has a dot pitch of 0.26

memory – which is faster than standard RAM – and a 1Gb hard drive, and it's a performer.

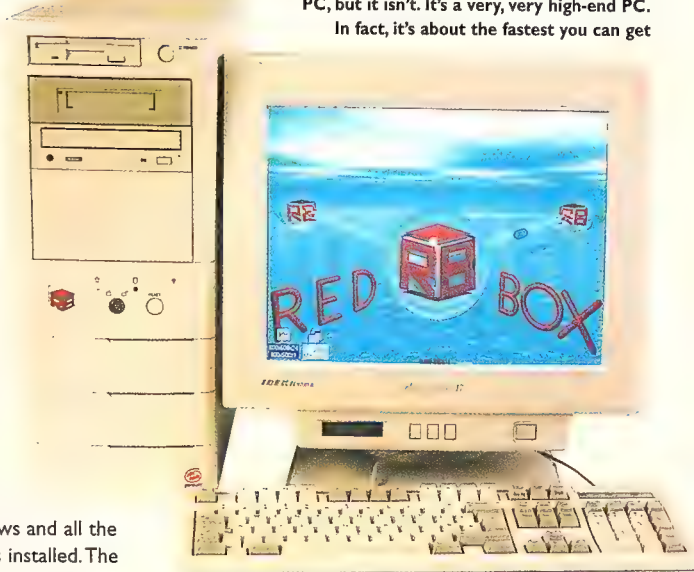
Features include a quad speed CD-ROM drive, 850Mb tape streamer and a 28,800 fax/modem card. A SoundBlaster 16 is built into the motherboard. The monitor, a 17-inch Idek Vision Master, is truly superb. It can go up to

1,600 x 1,200 pixels and has a dot pitch of 0.26 – it's totally gorgeous. Providing the picture is a 2Mb Matrox, a very capable card.

'Fast' and 'very' are words that apply here. Norton System Information reported a CPU benchmark speed of 204, in comparison with a 100MHz 486 capable of 105. The hard drive's quick, too – transfer rates under DOS are 2,340 K/second, fast, even for an Enhanced IDE drive.

All the essential software – such as DOS, Windows and all the drivers for the hardware – is installed. The plasticky keyboard, however, lacks any 'punch'. This machine costs about the same as a second-hand BMW, and is still warm from the labs. It's put together well and the case isn't cheap and nasty, but this hardly warrants the price tag – all the goodies are on the inside. The price should fall – the latest kit always goes for a premium – but if you've got a money tree in the garden this is one of the best you can buy.

◆ This may look exactly like any other high-end PC, but it isn't. It's a very, very high-end PC. In fact, it's about the fastest you can get



Winstation 133

Contact: Red Box
Number: 01480 405541
Price: £3,636.63

PC Answers Rating

82%

3D Atlas

This is a magnificently-produced look at the world, much more than just an atlas. There are three main ways of looking at the planet: the Environmental Globe uses satellite photographs to build a complete view of the earth from space, the Physical Globe features the topographical details, and the Political Globe shows the various countries. You can zoom in and out of the globe and overlay details such as rivers, volcanoes and major cities. Click on the globe to highlight countries and access an all too brief summary of the country and half a dozen or so pictures, all of which are excellent quality.

There's a statistics section containing data from the World Resources 1994-95 Database. You can display data as comparison tables, graphs and

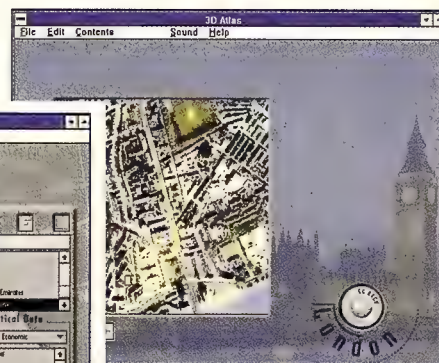
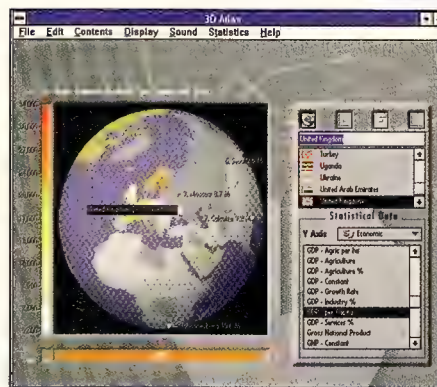
maps, and even create your own statistics by cross-referencing two sets. It's information such as power consumption, land use and transport. All fascinating stuff, but, disappointingly, unaccompanied by explanatory text.

There's a look at the earth's systems – such as the geosphere, hydrosphere and biosphere – video clips about environmental issues such as acid rain and oil pollution, and what the program calls biomes, habitats such as desert and forest. All clips are classy and can be played back full-screen if your PC's fast enough.

To round things off, you can take a 3D flight through some of the world's major mountain regions and scrutinise the satellite images of six cities. There's a rather flag-obsessed quiz which enables you to test your newly-acquired knowledge. A selection

◆ The main screen of 3D Atlas and the brilliant globe, culled from satellite photographs. You can zoom in until the UK takes up all of the window and scroll around

◆ You can see my house from here. The remarkably detailed satellite map of London, compiled from recently released photographs taken by Russian spy satellites



◆ You can view statistics in 3D Atlas in four ways. Here's the Gross Domestic Product per capita displayed in map form – the UK is an orange-yellow

of appropriate icons enables you to mark out any area of personal interest.

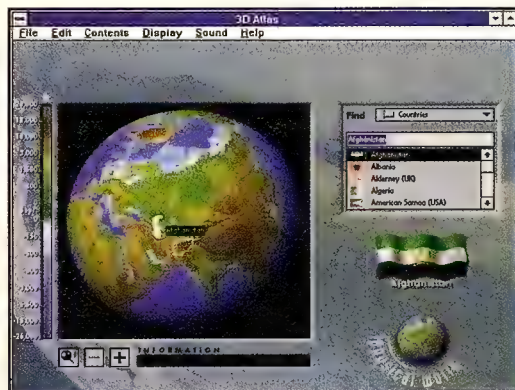
3D Atlas has been lavishly produced – sound and graphics are superb. There's plenty to explore, mostly presented in easily-digestible pictures and video. That's the drawback, though – there's hardly any text, making it a little lightweight. Otherwise, it's an excellent – if pricey – CD-ROM.

3D Atlas

Contact: Electronic Arts
Number: 01753 549442
Price: £64.99
Minimum hardware: 486 with 8Mb RAM

PC Answers Rating

75%



MagnaRAM

Believe it or not, Apple Mac users have had RAM 'doubling' software

for years, but on the PC it's relatively new. The idea is that, with *MagnaRAM* installed, Windows appears to have more physical RAM, so you can run more Windows applications and DOS sessions without running out of memory – and run them faster.

Landmark claim two, three or even four times more effective memory, but we only averaged compression ratios of around 1.3:1. If you're working with large graphic, text or other data files, it's more impressive, but if you just have lots of apps open expect the lower figure.

MagnaRAM is supposed to be most useful on a PC with 8Mb of RAM and Windows 3.1 – you benefit less with 4Mb and 16Mb systems. Once we'd installed *MagnaRAM* we did manage to load *Picture Publisher* and *PhotoShop* on an 8Mb PC, but, unfortunately, this wasn't something we'd ever wanted to do before.

MagnaRAM works by compressing the 64K memory pages Windows works with – and swaps out to the hard drive – and sticks them into a buffer in RAM instead. These stay compressed if

◆ The *MagnaRAM* control panel, with pleasingly few new icons to learn. The important one is on the far left – it shows how well *MagnaRAM* is working

they have to go to the hard drive anyway, which results in more savings.

As the buffer comes out of Windows stock of RAM, you need some to spare, which explains the 8Mb recommendation. Its effectiveness can be seen on a software meter that tells you how many swap file hits have been avoided and how many seconds this has saved.

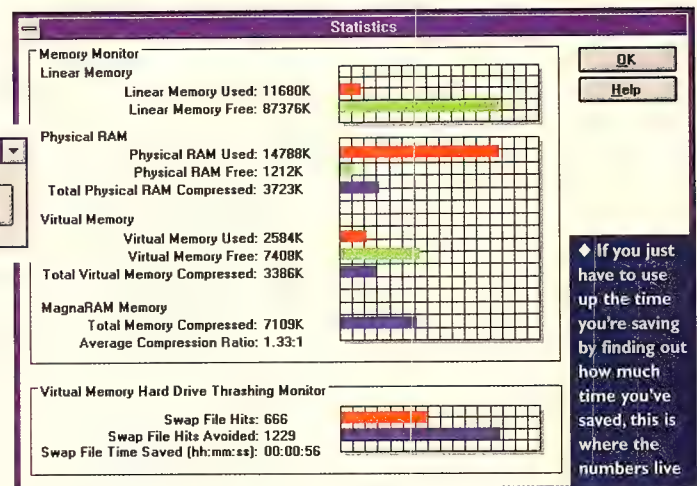
Physical RAM is often doubled by an upgrade, *MagnaRAM* is much more subtle – on an 8Mb system you benefit from the equivalent of two to three megabytes extra. Sadly, this is nowhere near enough to change your life. Don't fool yourself, though, running *MagnaRAM* is certainly not as good as fitting more physical RAM, it's just

cheaper. It enables you to push Windows a bit harder but not a great deal. If you're thinking of upgrading to Windows 95 – free to registered users – but can't wait, buy *MagnaRAM*.

MagnaRAM

Contact name: Landmark
Number: 01442 878100
Price: £58
Minimum hardware: Windows 3.1, 4Mb RAM
PC Answers Rating

81%



◆ If you just have to use up the time you're saving by finding out how much time you've saved, this is where the numbers live

WinProbe 3

Landmark specialise in utilities. In the US, one of the biggest-selling utilities is *WinProbe 3*, which can reclaim missing system resources either manually or automatically at preset intervals.

Resources are those three 64K chunks of memory in which Windows and Windows programs store useful operating information... and resources are what you've usually run out of when Windows says you have no memory while telling you there are 22Mb free.

Some apps forget system resources, some simply die and fail to free them. Either way, *WinProbe* can retrieve them for you – handy, but

Other facts could equally well be wrong, but it wouldn't matter – we haven't a clue what they mean

hardly earth-shaking stuff. Mostly, though, *WinProbe* displays information about the operation of Windows and your hardware. These range through CMOS set-

tings, IRQ lists, descriptor tables – don't ask – and other sometimes useful, often obscure facts and figures. Then there are diagnostics.

You can interactively check out the operation of your keyboard, check serial ports, surface scan disks and lots more besides. Some of it's pretty interesting, some rather disconcerting – discovering you have 36 open files when you're only running two apps, for example, is disconcerting. The

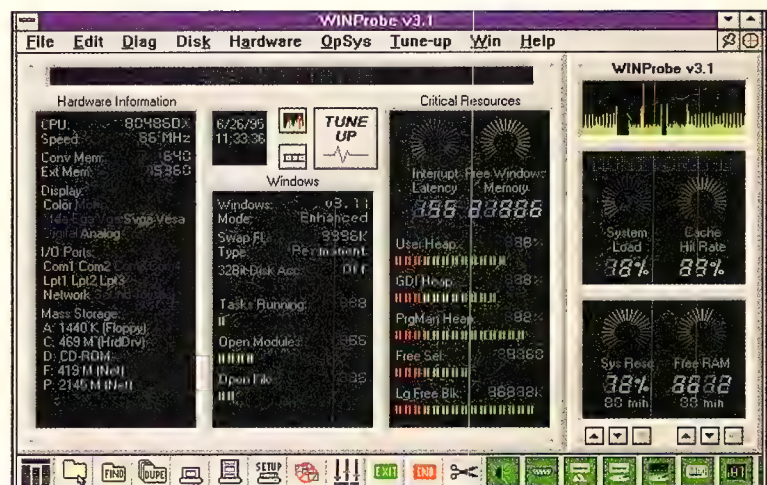
Tune-up section is disappointing – it only makes suggestions, you have to manually edit system files to implement them.

Anyway, Windows tunes itself pretty well when installed. Being told that adding more memory will improve performance only makes you gnash your teeth – there's no button that you can click on that will install it for free.

Icons galore – over 80, in fact – along the bottom of the *WinProbe* window enable you to bypass the menus but, in practice, the menus are faster and have handy, explanatory words. It seems unlikely, though, you'd have any reason to access most of the features.

WinProbe isn't infallible. It insists the test PC is running Windows 3.1 – not 3.11 – claims the hard drive is 469Mb rather than its actual 210Mb and the button that's supposed to reduce it to a floating icon doesn't work.

Other facts could equally well be wrong, but it wouldn't matter – we haven't the slightest idea



◆ An awful lot of information – not all of it accurate, unfortunately – at your fingertips. Plus, of course, the handy ability to reclaim system resources

what they mean, anyway. *WinProbe 3* is ideal for engineers and programmers, but most end users will find it less useful – and confusing.

WinProbe 3

Contact name: Landmark
Number: 01442 878100
Price: £82
Minimum hardware: Windows 3.1, 386 or better processor
PC Answers Rating

75%

Multimedia Family PC

SYSTEM SPECIFICATION

- 486DX2-66, 486DX4-100 or Pentium® 75 processor
- Massive 540Mb fast IDE hard disk
- 4Mb RAM or 8Mb RAM
- 1.44Mb Floppy drive
- Pentium® technology upgradeable
- 32-bit Local Bus SVGA graphics controller (64-bit PCI graphics on Pentium model)
- 14" (monitor shown is 15" digital, available at extra cost) SVGA colour screen
- Desktop case with 4 bays and 7 slots
- 102 Keyboard and Microsoft compatible mouse
- DOS and Windows 3.11 (Windows 95 option available)
- Made by Mitac in the UK

Multimedia Hardware:

Double Speed CD-ROM drive (quad speed optional), 16-bit high quality soundcard and Twin stereo speaker system. Free software with 8Mb RAM models only

Included
FREE for a limited period until end of month

These powerful, high specification 486DX2-66, 486DX4-100 and Pentium® 75 CD Multimedia Systems provide the complete solution for the home. They all come with excellent business software from Lotus and other leading manufacturers plus a range of

educational and leisure software titles.

All are fully multimedia ready with fitted CD ROM drives, 16-bit sound cards and stereo speaker system. At just £798 this is the best home multimedia deal in the UK!

PRE-LOADED SOFTWARE

Business Software Suite

- Lotus Software suite including Lotus 1-2-3 Spread sheet, Lotus Ami Pro Word processor, Lotus Approach Database, Lotus Organizer 2, Lotus SmartPics graphics
- New Quicken v4 personal finance package
- TurboCAD v2 for Windows CAD & design package

Training Software

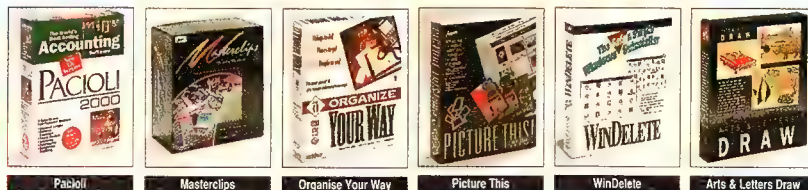
- Lotus Training on 1-2-3, Ami Pro and Approach

Educational Software

- EZ Language French, German and Spanish
- Play & Learn Educational CD

Leisure Software

- Doom, Blake Stone, Pinball and Raptor Shareware Games
- Wired for Sound Lite



**Multimedia
Family
PC**

Family PC 2
486DX2-66 4Mb

£798 +VAT

8Mb models with extra software £160 +VAT
Model 3: 486DX4-100, 8Mb £999 + VAT
Model 4: Pentium® 75, 8Mb £1199 + VAT

WHAT WILL IT DO FOR YOU?

Our Multimedia Family PC includes everything you need now and is designed to be upgradeable and future-proof as your needs grow. These are just some of the things you can do:-

General Business

Lotus Software Suite includes 5 leading software packages with an RRP over £800 that provide all your general business needs for word processing, financial reports, database filing, organizing and graphics.

Home/Business

TurboCAD is a full-feature CAD package that lets you design your home, garden, floorplans and much more. Quicken personal finance pack manages all your personal accounts

Training

Training programs show you how to get the most out of your PC with comprehensive training on Microsoft Windows®, Lotus 1-2-3, Lotus Ami Pro and Lotus Approach.

Education

Play & Learn educational CD provides programs that include essential elements of the National Curriculum whilst Language programs teach French, German and Spanish.

Leisure

Superb games eg DOOM come as standard with this PC and a quality joystick option is available.

CD Multimedia & Sound

Our multimedia PC uses the fastest CD-ROM drives providing around 650Mb of data on each CD! and high quality 16-bit sound with stereo speaker system. You can also play your standard music CDs.

Fax & Internet Option

Our low cost Fax & Internet option converts your PC into a full-feature fax machine and allows you to connect to services such as Compuserve and the Internet.

Why Multimedia PC from Time?

We are confident that at just £798, our Multimedia Family PC offers the best value in the UK. Here are just some reasons why:-

1. 540Mb Hard Drives

Forget 270 or 420Mb drives, 540Mb is the minimum you should consider. Lack of hard disk space is the most common reason for system upgrades.

2. Quality Components

Our Mitac systems feature top quality components and are designed to be future-proof and upgradeable.

3. Fastest Processors

You should not consider anything less than 486DX2-66 or 486DX4-100 processors. The 486DX4-100 processor is faster than the Pentium® P60 processor on many benchmarks

and represents the best performance per £.

4. Lotus Software Suite

Lotus Software suite alone has a combined RRP over £800 and is the best collection of business software available.

5. Home, Educational & Leisure Software

Quicken v4 Personal Finance, TurboCAD v2 CAD, IMSI EZ Language Training Pack, Paciolli 2000 Business Accounts and Play & Learn Educational Pack are leading packages in each field and allow your PC to be used for these purposes.

TIME
Computer Systems Ltd.

Granville House,
Blackburn Road,
Simonstone,
Burnley, BB12 7GT

CALL NOW!
Sales Lines Open
Mon-Fri 9.30am-7.00pm
Sat 9.00am-5.00pm



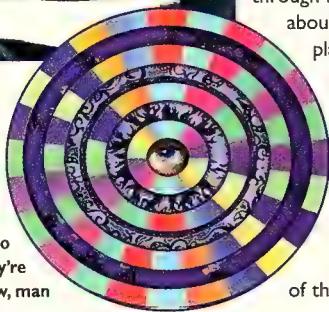
01282 777 111

Haight-Ashbury in the Sixties

◆ *Haight-Ashbury in the Sixties* is a journey through the sights and sound of the time and place. If you get the smells as well you're in trouble



◆ There are hundreds of photographs from the period. Here are some young people apparently enjoying themselves during the summer of love



◆ The psychedelic graphics used to decorate the discs are excellent. They're full of images like this... wow, man

This two-CD-ROM package takes you for a nostalgic trip through the people, ideas and popular culture of the Haight-Ashbury district in San Francisco in the mid to late '60s. Hippies – or swinging, middle class, long-haired layabouts, as some would have it – from the period can relive the heady era. It's divided up into three sections. Turn On is a look at a the history of Haight-Ashbury, in pictures, music and poetry. Tune In is a reference section featuring the music and all those posters with the wobbly writing. Drop Out is game to play when you've had enough of memory lane.

The first section is exactly like being talked through a sideshow while somebody plays about with the volume control on a stereo playing a popular beat combo of the day. It's fascinating stuff, though. The reference section includes plenty of music, interviews and video clips of the major events of the time. You can arrange these in any order you like to create your own compilation of your favourite bits.

The game is funny, in both meanings of the word. You gain and lose points for

love and hippiness in a slow moving but visually pleasing board game. But this is a major work of incredible silliness – the space would have been better used for more archive material.

The graphics through the whole experience fit the bill perfectly, they're colourful and distorted. The music includes excerpts from favourites Grateful Dead, Jefferson Airplane and Big Brother and the Holding Company.

This is undoubtedly a rose-tinted view, which may well be the best way to look at the '60s. Both the place and the time are presented with an almost religious reverence – at times it's almost too cringingly pretentious to bear. If you have a soft spot for the scene and you still think that saying cool is cool then you'll love it.

Haight-Ashbury in the Sixties

Contact name: Channel Market Makers
Number: 01703 812755

Price: £39.99

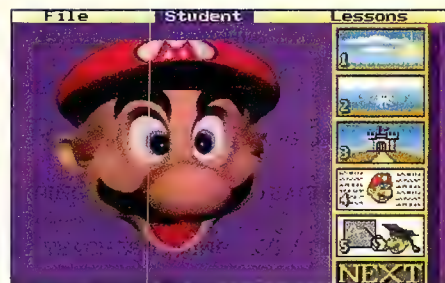
Recommended hardware: 486 with 4Mb RAM

PC Answers Rating

79%

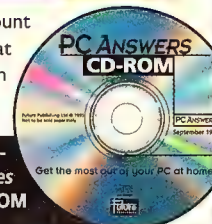
Mario Teaches Typing

◆ The main screen and Mario himself, chatty and even amusing at times. You either warm to the cheeky chap or you don't. The music is slightly more of a challenge



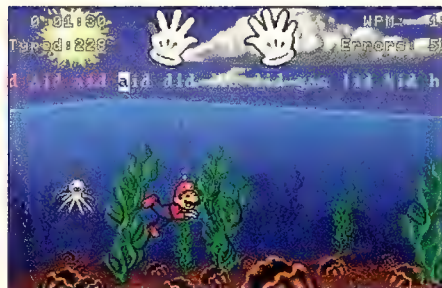
reach a high standard, no amount of graphics can get around that sad fact. If you think Mario can help, go for it.

See if Mario can help you – check out the *Mario Teaches Typing* demo on the CD-ROM



Typing's a very handy skill to master and apparently some people like to start young – which would explain why they've got Mario as a teacher. Mario is – peculiarly – an Italian plumber and star of platform games. Quite why an Italian plumber was chosen to star in video games is anybody's guess – perhaps it loses something in translation from the original Japanese.

You begin by entering your name, your words per minute typing goal and which keys to start out using, from just the home keys to using the whole keyboard. There are four lessons: the first



three are dressed up as games, in which Mario's progress depends on your typing abilities and the fourth and last lesson is Mario's Expert Express, simple typing practice, parrot-fashion. Each lesson is basically the same – you mirror the sequence of letters on-screen, starting with simple letters and ending with complete sentences. Reach a certain standard and a reward screen pops up. All the sequences of letters freeze when you hit the wrong key, and stay frozen until you hit the right one. At the end of each lesson you're given a report on your competence.

If you plump for the CD-ROM version, you get Mario's disembodied head talking at you in a faintly ridiculous Italian accent – he's quite funny at times. *Mario Teaches Typing* does a reasonable job of disguising the fact that learning to type involves boring and repetitive exercises, slavishly copying stuff. The games and the colourful graphics make it fun... well, almost. What it won't instill is perseverance – you've got to work quite hard to

◆ Mario's Wet World Challenge. Save Mario from being eaten by typing the sequence correctly. Don't tempt me...

Mario Teaches Typing

Contact name: Interplay
Number: 01235 821666

Price: £29.99

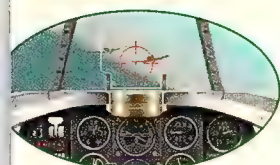
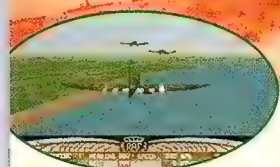
Recommended hardware: 286 with 1Mb RAM for floppy version, 386 with 2Mb RAM for CD-ROM version

PC Answers Rating

73%

THE WHITE LABEL

p r e s e n t s

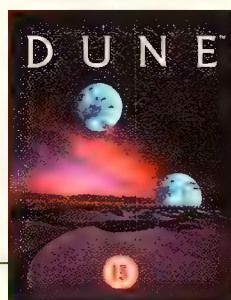


at a price you won't believe
ON PC CD ROM

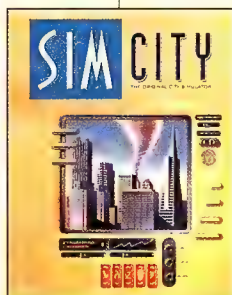
£9.99

also available

£9.99



DUNE



SIM CITY

£12.99



BUZZ ALDRIN

£12.99



INDYCAR

£9.99



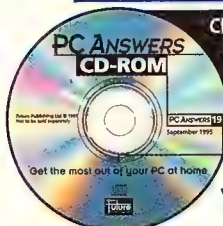
CREDIT CARD HOTLINE: 01373-453888

Overlord: © Program 1994 Rousa Software Ltd. © 1994 Virgin Interactive Entertainment (Europe) Ltd. Sim City: © 1993 Interplay Productions Ltd. Sim Ant and Sim City are registered trademarks of Sim-Business Design. © 1989, 1991, 1992, 1993, Sim-Business Will Wright. All rights reserved world wide. IndyCar, IndyCar and the helmet logo are trademarks of The Indianapolis Motor Speedway Corporation, under exclusive license to Championship Auto Racing Teams, Inc. Indianapolis 500 is a registered trademark of The Indianapolis Motor Speedway Corporation. Payrun is a trademark of Payrun Design Group, Inc. © 1994 Virgin Interactive Entertainment (Europe) Ltd. Buzz Aldrin: © 1993 Interplay Productions Ltd. All rights reserved. Dune: © 1992 CRI Interactive Entertainment. Virgin is a registered trademark of Virgin Enterprises Limited. All Rights reserved. All White Label titles © 1995 Virgin Interactive Entertainment (Europe) Ltd., 338a Leobridge Grove, London W10 5AL.

Shareware

The lowdown on the games and utilities on offer this month.
Shareware supreme Steve Bough investigates

Games



Check out *JuggleKrazy*, *Cold Dreams* and *Fab Four* on the CD-ROM – you can find them in the Shareware Section

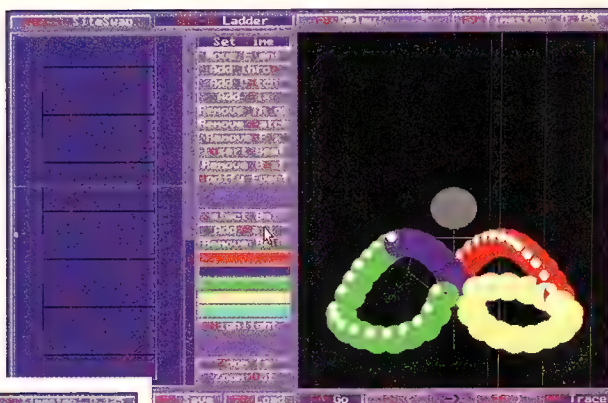
JuggleKrazy

Want to try your hand at juggling? Don't know where to start? Have a go with this shareware version on both HD and the CD. *JuggleKrazy* is a program that animates juggling patterns. It comes with over 60 patterns, which you have to try to mimic. The full version comes with complete animated tutorials and every juggling trick you can imagine. This means you can stand in front of your PC and practise the animation on screen – you can slow the tricks, add more balls, even create your own juggling patterns. Before long you should become a juggler extraordinaire.

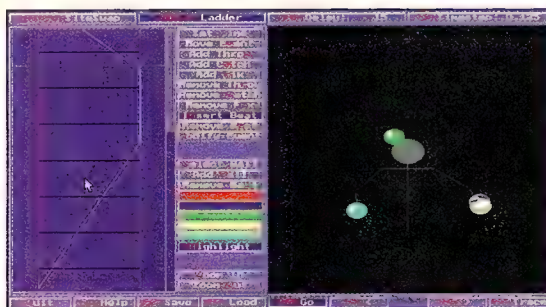
The tutorials can help improve your skill. You can do this by having the balls

leave trails behind them. Increase and decrease gravity to add an unusual dimension to the art of throwing and catching juggling balls. Whatever your level of skill, with a few lessons from *JuggleKrazy* you should improve.

What's great about this, is that it's so original. Whether you're an expert or novice, you're sure to learn a thing or two from the program. It's quite expensive, but a comprehensive juggling package is worth a look.



◆ Four-ball juggling at its finest. If you devise any new patterns you can include them in *JuggleKrazy*. Don't forget to practise with the demo



◆ Add tracing to your juggling patterns, and set the delay rate high. This way you can observe and practise the pattern. Look, it's simple...

JuggleKrazy

Contact name: Beard Enterprises Ltd
Number: 01442 843672
Registration: £24.99
Requirements: modem

PC Answers Rating

79%

Future Dimension

Yet another shareware game which has you shooting down scores of alien ships. (Where do all these aliens come from?) Fly around the galaxy as you attempt the six huge levels, each of which takes well over ten minutes. Admittedly, there's no plot, not that it matters, of course – this is a shameless, ultra-fast shooting game. So, if

you fancy turning your PC into an arcade machine, try *Future Dimension*.

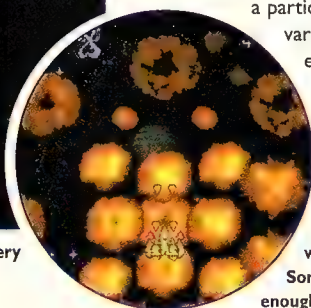
Initially, you take on the asteroid belt, but it becomes progressively harder. Up to five players can compete, with the shared objective being to destroy the enemy. Each of the six levels is divided into three parts: you start with the 3D section and move on to the vertical and horizontal sections. The levels are interspersed with additional bonus stages and level guardians, which make the game quite a challenge.

You're allocated standard weapons at the start of a level. Collect all 12 icons along the way and you should end up with a combined mega-weapon. There are also four different smart bombs and two special weapons, all of which make your ultimate task that much easier. Secret stages have been added to levels – for example, you may need to fly directly through a black hole to enter a particular asteroid. With such varied and difficult levels, don't expect to complete *Future Dimension* quickly.

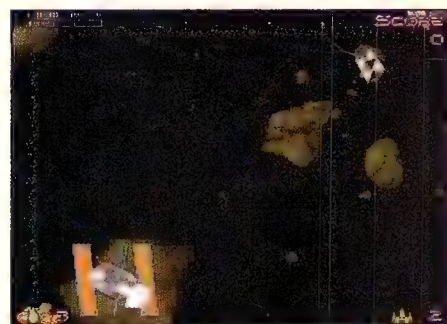
This may be yet another shooting game, but it stands out because of its sensation-



◆ Each level is divided into three parts. Even the very first level is challenging – to make you sweat even harder there are three difficulty settings



◆ Smart bombs are an effective way to clear the screen. Sometimes sheer fire-power isn't enough to keep the devils at bay



◆ The asteroid belt, which you've got to negotiate if you want to get to the next stage. Here's a top tip: try to stay right in the corners

al speed, arcade-like style and challenging and diverse levels. There's a catch, though: at just under £40, it's a very expensive shareware game – *Ultimate Doom* is cheaper. On the whole, *Future Dimension* is fun but too pricey – and six levels just aren't enough to keep you satisfied.

Future Dimension

Contact name: Lifetimes/Expert Software
Number: 00 49 23 613 6267
Registration: 89 DM (approx £40)
Requirements: 386 and above, SoundBlaster, VGA

PC Answers Rating

73%

Cold Dreams

An unusual title for a game, and one not entirely appropriate – for one, it isn't a dream and two, it's not cold, it's set on a hot planet. *Cold Dreams* is your average platform game for the PC, involving hideous beings, hidden rooms and level guardians – everything, in fact, you've come to expect from the genre. The idea, as with all platforms, is to collect items and locate the exits. And, yes, hindering your route is the usual ensemble of highly unpleasant aliens – kill these



◆ The knights of the magic caverns put up a good fight, but they should be no match for you

with your numerous weapons and you're snatched away from harm's jaws.

There is a plot, and, as usual, it's another laughable fairytale. Set on the distant planet of Swandah, deep in the galaxy, lies hidden the fabled energy gates, which give everlasting life to those who can unravel the power. Unfortunately, no brave knight has ever returned from his quest for immortality. You must walk the dark maze and fight the warlords of the underworld – can you find the golden keys and solve the mystery of the energy gates? Believable story, eh?

Controlling your knight, you bounce and battle your way through this first, large episode of the shareware version. (As usual, there are two more episodes if you register.) Careful use of your weapon supply is the key to safe progress – find yourself without ammunition and you die. All you have to do is find the keys, destroy your enemies and then locate the exit.

Cold Dreams doesn't claim to be a great game. Platforms for the PC aren't in abundance and, with games like this, it isn't surprising. It provides an



◆ Wandering through the maze of caverns becomes quite frustrating after about ten minutes.

average challenge, but fails in its graphics and sound. It may be a good price, but it isn't up to scratch – especially with so many quality budget titles available.

Cold Dreams

Contact name: PD Selections

Number: 01474 325802

Registration: £20

Requirements: 386 and above, SoundBlaster, VGA

PC Answers Rating

70%

Fab Four

The game *Fab Four* is, as you've probably guessed, a quiz about the most famous group in pop history. The shareware version poses 75 questions on the life and times of John, Paul, George and Ringo. It covers every development since the band formed, and you get another 500 questions on the Beatles when you register.

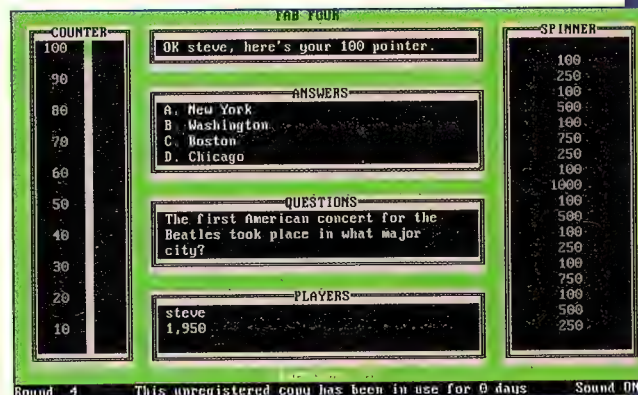
Also thrown in is a section entitled One Hit Wonders – a music trivia quiz – and a complete discography of this, possibly the finest group ever, and certainly one of the most enduringly popular. Even the most casual Beatle fan should know

some of the answers, but you'll have to be Brian Epstein to get them all.

The object of the game is to accumulate the most points by answering correctly. But this isn't easy... From the White Album, where did Rocky Raccoon come from? From where did the Beatles arrive Back in the USSR? Who's not wearing shoes on the cover of *Abbey Road*? If you know the answers to these and are a dedicated fan of the band, you'll love this quiz. Even if you're not, it's still an enjoyable way to pass the time.

As PC leisure titles go, *Fab Four* is good fun, and better in four-player mode – you do get quite a bit for your money. It could have been improved by better graphics and some Beatles tunes, which are strangely lacking. But, if you like music quizzes and can remember the heady days of the swinging sixties, check this out for a bit of nostalgia.

◆ The questions in *Fab Four* should definitely challenge even the most ardent Beatle fan. Do you know the answer to this one? Um...



◆ You get 75 questions. Register and you get a further 500 questions, another quiz and a discography

Fab Four

Contact name: Sportware South

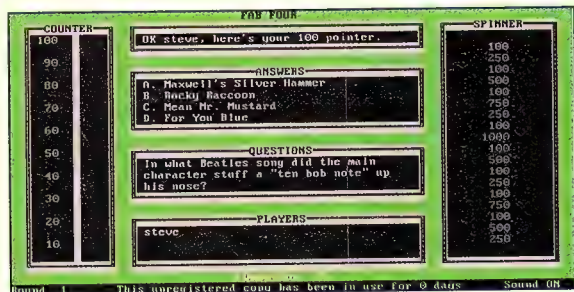
Number: 00 11 615-675-5403

Registration: \$17.95 + \$3 ptp (approx £13 total)

Requirements: 386 upwards, SoundBlaster,

PC Answers Rating

69%



Bargain software guide

Shareware

The shareware phenomenon relies heavily on people's honesty and responsibility. The theory behind it is, you buy a copy of the program for the cost of the disk and postage, which you can play with for an agreed period – it's usually 30 days. If you decide it's worth keeping, send a registration fee to the author, who will then send you the latest copy of the program.

By registering, you get regular updates and bug fixes – as well as a full copy of the software that doesn't fill your screen with 'please register' reminders all the time.

This is the theory, but in practice far too many people don't bother to register. They are quite happy to make use of the freebie, shortened versions and put up with the annoyance of the

'hassle' screens. As a result of this, shareware publishers are increasingly releasing 'chopped down' shareware versions of the software, which has some of the features 'missing', or, as is the case with games, only a couple of levels, so you need to register in order to get the fully working version and/or the rest of the levels.

This arm-twisting approach has become more and more common recently, and looks as though it is set to become a permanent feature of the shareware scene.

Licenceware

This appears to be a shrinking method of distribution, since it is less common to see something described as licenceware. You pay a little more for licenceware than you would for shareware, because a royalty for the author is already included in the price. You don't have to

register it and you don't get any 'hassle' screens or bits missing, as you've already made your contribution to the author.

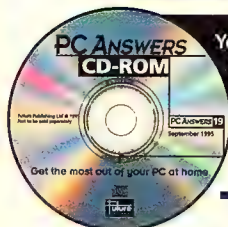
Public Domain

Public Domain (PD) software is available everywhere. It costs you nothing, other than the distribution costs. There are no restrictions on how you use it or how you distribute it. The copyright is placed in the public domain, along with the files themselves, and so you can amend or improve it by fiddling with the code.

Freeware

Just like Public Domain software, freeware costs nothing and you are free to distribute it to whomever you please. The big difference is the copyright is held by the author, so you're not entitled to alter or fiddle with the files which make up the software in any way.

Utilities



You can find SmartSurf and Fonter in the Shareware Section on the PC Answers CD-ROM

SmartSurf

This is a free program designed to help you keep track of the time you spend using various on-line services. As mentioned, it's free, and it records the time spent on-line and then calculates exactly how much it's cost you. Further still, it remains on-screen so you can see the time ticking away. We've put it on the CD for you to try out.

If you regularly use the Internet, a BBS, Cix or any other service, it's really useful. You know how expensive your call was and how long you were on-line. Even if the service crosses a charging boundary it will rectify the price of the call. SmartSurf operates in two modes: timing and normal. The timing mode appears as a long thin window, and remembers its position from run to run. It can be initiated automatically or by stop and start buttons. When it detects the con-

◆ This appears on-screen when you click on the clock icon. It displays the duration of the call and the total cost. Not a huge amount – yet

Service Management Drive C: 67.3MB

Service Name	Telecom Cost	Service Cost	Validity
Service Details			
Service Name			
Service Id	Negotiation Delay <input type="checkbox"/> Secs		
<input type="checkbox"/> Record Additional Data for this Service			
<input type="button" value="Help"/> <input type="button" value="Listing"/> <input type="button" value="Delete"/> <input type="button" value="Apply"/> <input type="button" value="Finished"/>			

nection has terminated – or you press the stop button – it writes a log record. In normal mode you can review details of the log record, add or delete records and configure modem connections. It runs on a battery which you have to recharge periodically. The batteries are free via the Internet or Cix. In fact, absolutely everything's free, so you've no excuse for not making good use of it.

SmartSurf is only really of use if you frequently use the Net, BBS or any other on-line services.

– the answer to this one's almost invariably yes. Want to save money? Use SmartSurf.

SmartSurf

Contact name: Oakley Data Services
Number: 01270 759739
Registration: Public Domain
Requirements: modem

PC Answers Rating

79%

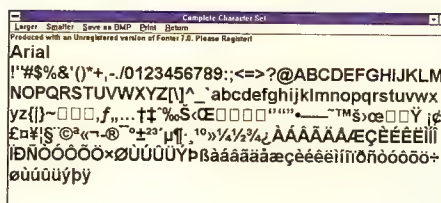
SmartSurf - smartsurf.ssf							32.6MB / 62%
File Edit Configure Help							
Date	Time	Data	Duration	Phone	Service	Total	
06/27/95	15:58	mfl	00:00:06	00.05	00.00	00.05	
06/27/95	16:02	mfl	00:01:26	00.15	00.00	00.15	
Totals [All 2 Entries]			00:01:32	00.20	00.00	00.20	

Fonter

Having trouble changing between fonts? Sick of messing about for hours trying to find the right typeface? If you are, don't despair, things are about to change – Fonter's here. With Fonter you can view any Adobe Type Manager – ATM – or TrueType font on-screen in several ways. To make choosing the appropriate font even easier, Fonter enables you to create printed lists of all your fonts. You can also print sample sheets or character set charts that show you just what characters are in every font.

Fonter has everything you could wish for. You can see every special character, along with the appropriate key. No more puzzling over Dingbat and Symbol fonts – this shows each character. You can preview TrueType fonts before installing them – it's unique because you also see how the fonts will print before you've installed them. Compare eight fonts in a full-screen window or on the printer – everything you thought impossible.

This software is invaluable if you use fonts for business, pleasure, or both, whether it be DTP,



◆ The complete character set. Fonter displays all the characters and tells you how they correspond on the keyboard. A previously tricky job made peanuts

word processing or newsletters. Disappointingly, though, Fonter only works with TrueType and Adobe Type Manager scalable fonts – it hasn't been tested with other font scaling software. But changing and displaying fonts has never been so simple. You can even install fonts for temporary sessions in Windows and, if you like it that much, permanently install it.

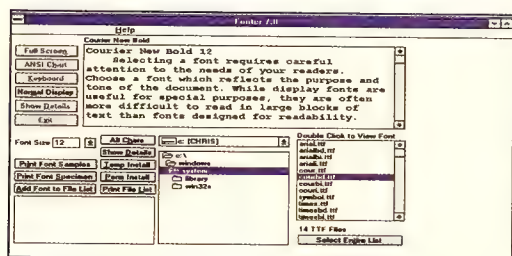
Fonter is easy to use, varied and cheap. You can now do virtually everything you always wanted to do with your fonts, things which previously you never dared attempt because they seemed like such a lot of bother. The only drawback – sadly, it isn't perfect – is that more fonts could have been included. Try out the demo version on the CD. Quick, simple and up to the job.

Fonter

Contact name: Sportware South
Number: 0011 615-675-5403
Registration: \$17.95 + \$3 p+p (approx £13 total)
Requirements: 386 upwards, SoundBlaster,

PC Answers Rating

76%



◆ Clicking between the fonts is as easy making pumpkin pie. You can install fonts, print them or add fonts to the file list

Shareware contact list

The shareware on these pages can be obtained from the distributors mentioned below. This list is not exclusive. Prices quoted are to register and shareware versions can be obtained for the lower cost of the disk and postage

Atlantic Coast Plc	01297 552222
Benetech Systems	01533 600033
Ensign Systems PPC	0181 778 2871
Epic Megagames UK	01767 260903
Invicta Shareware	0181 302 6213
Jupiter Software -BBS (modem)	0181 947 7527
Laser Distribution	01404 46660
Nildram Software	01442 891331
Oakley Data Services	01270 759739
Omicron Systems Ltd	01702 710391
PC Gold Shareware	01162 542828
PDSL	01892 663298
PD Selections	01474 325802
Precision Software Publishing	01223 208288
Red Dragon Shareware	01745 338094
Shareware Elite	01326 564164
Shareware Solutions	01277 630262
Softcell	01443 238630
Springsoft	01352 770049
TestWare Publishing	01423 886415
Thompson Partnership	01889 564601
Transend	01274 622228
Villa Shareware	01889 567941
Wisewol Shareware	01235 529808
17 Bit Software	01924 366982

◆ PC Answers does not endorse or recommend any of the libraries listed. If your library is not included, please forward on to us your catalogue and contact details, and we will endeavour to ensure that your name is included in future editions

Multimedia

Time Machines

SYSTEM SPECIFICATION

486 Models

- 486DX2-66, 486DX2-80 or 486DX4-100 processor
- 540Mb, 850Mb or 1.0 Gb fast IDE hard disks
- 4Mb or 8Mb RAM expandable to 64Mb
- 1.44Mb floppy drive. 256K external cache
- Pentium technology upgradeable
- VESA SVGA graphics controller with 1Mb
- 14", 15" or 17" SVGA non-interlaced low radiation colour screen with 0.28dp
- Desktop case (new design) with 4 drive bays and 7 slots
- 102 keyboard and mouse
- MS DOS 6.22 and Windows® 3.11
- Manufactured by Mitac in the UK
- 12mths warranty extendable to 5 years

Pentium Models

- Intel Pentium® 60, 75, 90, 100 or 120MHz based processors
- 8Mb or 16Mb RAM expandable to 128Mb
- PCI Pentium board with PCI graphics and PCI IDE hard disks

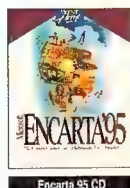
Rest of specification as 486

Multimedia Hardware

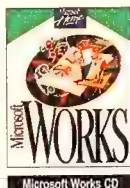
- Double or Quad speed IDE CD-ROM drive
- 16-bit high quality soundcard
- Twin stereo speaker system
- PC joystick

Fax & Internet Pack 1

- BAPT approved data and fax modem
- Fax software
- Communications software
- Introductory subscription to CompuServe with Internet Mailbox



Encarta '95 CD



Microsoft Works CD



Golf CD



Beethoven CD



Dangerous Creatures CD

PRE-LOADED SOFTWARE

Please call for details

Business Software

- Lotus Software suite including Lotus 1-2-3, Ami Pro, Approach, Organizer 2, SmartPic and Lotus Training
- GST Pressworks 2 and Designworks 2
- TurboCAD for Windows
- Organize Your Way
- CV & Job Search Pro
- Pacioli 2000 Business Accounts
- Masterclips SE and Picture This!
- Quicken v4 Personal Finance

Educational Software

- Windows Training and WinDelete
- Fun School 4, Fun School Maths and Typing Tutor
- Computerworks, Bodyworks, EZ Language French, German and Spanish

Leisure Software

- PC Paintbrush, Arts & Letters Draw and Wired for Sound Lite
- Doom, Blake Stone, Pinball and Raptor Shareware Games

Microsoft® Multimedia Software

- Microsoft Encarta '95 Encyclopaedia CD, Microsoft Works CD, Microsoft Golf CD, Microsoft Beethoven CD, Microsoft Dangerous Creatures CD

The Multimedia Time Machines are powerful, high specification 486 and Pentium systems that provide the complete solution for the home and small business environment. They all come with excellent business software from Lotus and other leading manufacturers plus a range of educational and leisure software. All are fully multimedia ready with fitted CD-ROM drives, 16 bit soundcards and a superb range of CD Multimedia titles from Microsoft®. Also included is the Fax and Internet Pack

allowing these systems to function as a powerful fax machine and allowing you to get on-line to services such as CompuServe and the Internet. At these amazing prices with Interest Free Credit available for a limited period, these systems are without doubt the best computer solutions for the home and small business user. Add a quality Printer Pack or Scanner Pack (available on Interest Free Credit) for a complete solution.

APR
0%
INTEREST FREE CREDIT

Interest Free Credit is available subject to status. Written quotations are available on request. Be sure you can afford the payments before entering into a credit agreement. Software is pre-loaded. Pack shots shown for illustration only.

Multimedia Time Machine 1	Multimedia Time Machine 2	Multimedia Time Machine 3	Multimedia Time Machine 4	Multimedia Time Machine 5
486DX2-66/DX2-80/DX4100	486DX4-100	Pentium 60	Pentium 75, 90, 100	Pentium 90, 100, 120
486DX2-66 with 540Mb hard drive, 4Mb RAM, 14" screen and modem	486DX4-100 with 850Mb hard drive, 8Mb RAM, 15" screen and modem	Pentium 60 with 540Mb hard drive, 8Mb RAM, 14" screen and modem	Pentium 75 with 850Mb hard drive, 8Mb RAM, 15" screen and modem	Pentium 90 with massive 1.0Gb hard drive, 16Mb RAM, 2Mb PCI S3 64-Bit Video RAM, 15" screen and modem
£39	£49	£59	£69	£79
£159.15 deposit and 24 monthly payments of £33.00 OR £495.15 deposit and 24 monthly payments of £39.00 Total price £1199.00+VAT = £1431.15 Inc delivery & VAT. APR 0%	£199.65 deposit and 24 monthly payments of £66.00 OR £607.65 deposit and 24 monthly payments of £49.00 Total price £1499.00+VAT = £1783.65 Inc delivery & VAT. APR 0%	£186.40 deposit and 24 monthly payments of £69.00 OR £426.40 deposit and 24 monthly payments of £59.00 Total price £1549.00+VAT = £1842.40 Inc Delivery & VAT. APR 0%	£229.40 deposit and 24 monthly payments of £77.00 OR £421.40 deposit and 24 monthly payments of £69.00 Total price £1749.00 -VAT = £2077.40 Inc delivery & VAT. APR 0%	£278.15 deposit and 24 monthly payments of £97.00 OR £562.65 deposit and 24 monthly payments of £79.00 Total price £2199.00 +VAT = £2606.15 Inc delivery & VAT. APR 0%
Model 1B 486 DX2-80.....£50 Extra Model 1C 486DX4-100.....£100 Extra RAM Upgrade to 8Mb.....£Call			Pentium 90 Upgrade £79 Pentium 100 Upgrade £179	Pentium 100 Upgrade £79 Pentium 120 Upgrade £399 15" to 17" Upgrade £250



Granville House,
Blackburn Road,
Simonstone,
Burnley, BB12 7GT

CALL NOW!
Sales Lines Open
Mon-Fri 9.30am-7.00pm
Sat 9.00am-5.00pm



01282 777 111

TIME 3A

Education

Neurosurgery is more comprehensive than some educational software. Dawn Gorman looks at programs that won't make your child's eyes glaze over

Companies which produce educational software would obviously do well to explain exactly what children are supposed to do. However, poor instructions and badly thought out manuals often simply bemuse users, and teach nothing except a fear of educational software.

Ideally, audio instructions are very clearly enunciated and to the point, written on-screen help is concise but comprehensive, and manuals address the children themselves, with additional parental guidance in packages for young children. With all this in mind, we take a look at three very different packages this month to see how they fair.

Meanwhile, Guildsoft has a clutch of new releases, which includes the slick-looking *Space Adventure 2* shown on the right, and a busy program for pre-school children called *My First Encyclopedia*. The latter program has 185 animations, games, colouring books, music, and ten different topics from Careers to The Body. Phew!

There's enough to keep them busy for quite some time.

Guildsoft is also set to improve on an old favourite with *Etch-A-Sketch*, the PC version of the enduringly popular children's drawing game.

The program features computerised special effects, animations, sound, a variety of interactive games, and a colourful video board reminiscent of the original game.

Finally, due for release next month is a new teaching aid series from VCI called *Language*



◆ *Space Adventure 2* combines in-depth videos, two reference encyclopedias, games and 3D simulations to explore space from your kitchen table

Learning. Designed for students of French and German at both GCSE and A level, these packages are very competitively priced at just £19.99.



You can find *Playing with Shapes* and other great demos in the Education Section on the CD-ROM



Director's Lab



Removes stains in minutes!

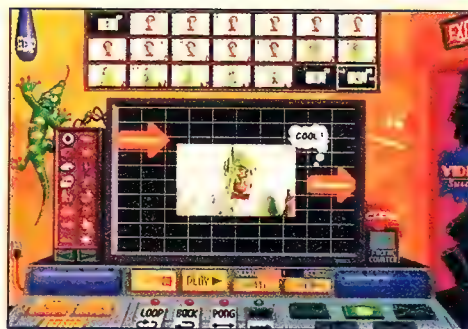
'Stops pain fast!'... if we're lured to buy on the strength of glib promises, we're just as often disappointed, so the eye-catching 'Easy to use!' flash on the *Director's Lab* box set warning bells a-jangling.

At first glance, the program's ambitious 'production studio' format seems anything but easy. There's a staggering range of pre-recorded audio and visual material, which, together with children's own on-screen drawings, tunes and animations await assembly into 21-frame videos. It's enough to make Spielberg run for cover.

However, the funky 3D 'How To Flip Guide' steers you along remarkably smoothly, with plenty of 'try this' ideas, and, if you still manage to get stuck, there's refreshingly clear and friendly, on-screen advice from Melissa Joan Hart of children's Satellite TV channel *Nickelodeon*.

There's a different studio for each aspect of your video, whether you develop ideas from scratch or choose ready-made items from the nine Archive categories. These cover everything from the environment to sport, and although there's an American bias to the material, there's plenty of alternative scope.

Visual and auditory clips can be modified to run backwards, forwards, fast, slow and in a loop... in fact, practically anything is possible. Want a huge, shocking pink, inverted headline? Go for it in the Title Editor! Fancy painting your own



◆ The Timeline presents all the component parts of your video at once, making synchronisation and final production work much more easy

background and dotting it with giant eyeballs? The tools and stickers await you in the Graphic Studio.

The Video Suite's archive boasts everything from flushing toilets to Ronald Reagan, with brilliant special effects such as 'Pong', which shuttles film clips forwards and backwards. In Sound FX, you can mix together sound samples, add effects such as echo and reverb and even dub in your own voice if you have a microphone.

The Music Studio archive has some tuneful pre-recorded music to use or modify, and even children with little musical know-how can compose tunes with a simple grid, nine real-sounding instruments and colour-coded notes.

Then you can create magical effects in the *Director's Lab* of the title, synchronising the



◆ In the Video Suite, stamps can be superimposed on your video frame-by-frame for special effects and bizarre animations

individual elements of your video to have your plants talking and pigs flying... the only restriction is your own imagination.

And you do need *lots* of imagination – as well as time – to get the very best from *Director's Lab*, but that 'Easy to use' flash is, thankfully, no idle boast. Children will be captivated and their efforts rewarded. A truly superb program.

Director's Lab

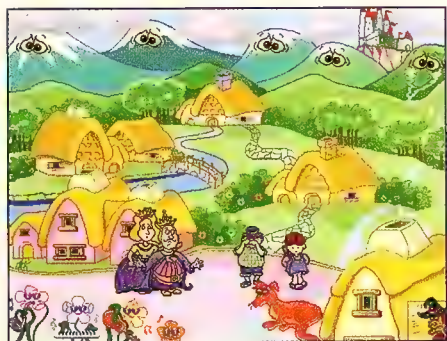
Age range: Eight upwards
Contact name: CIC
Number: 0181-846 9433
Price: £40

Recommended hardware: CD-ROM drive, 33MHz 386 (486 recommended) 3Mb RAM, soundcard, SVGA DOS 4.0 or later, mouse

PC Answers Rating

90%

Wonder Land



◆ In the Countryside, you just click on the sad faces, flowers, even hills to make them smile again. If only it was always that simple

Recently, a short story competition asked would-be brothers Grimm to write a 'modern fairy tale'. What? Transplant 'long, long ago' stories into a modern setting? A contradiction in terms, surely?

Not according to American company Mindscape, which compromises on the idea with its marvellous, interactive fairytale, *Wonder Land*. The introductory story has a fairytale feel, with witch, good fairy and roly-poly king, but many of the seven subsequent activities spirit you back to the present, with its aeroplanes, telephones and electric drills. The two worlds are cleverly integrated to produce an unusual and effective sound-

matching program to encourage listening and concentration skills.

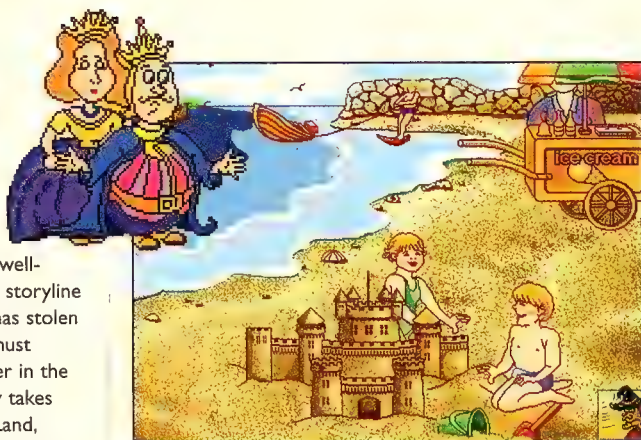
Narration and spoken instructions are clear and unfussy, and the manual is well-arranged and carefully worded. Even the storyline is simple. The wicked witch Gomorrah has stolen Wonder Land's sounds, and your child must retrieve them... and become a key player in the middle section of the story. Each activity takes place in a different location in Wonder Land, accessible in any order from the map-style menu.

In the House, Gomorrah has collected up day-to-day sounds such as a banging door and vacuum cleaner, and your child listens carefully to them, then clicks on each matching object to reunite them. Things are trickier on the Beach, as some sounds are red herrings.

One false click and you have a fire engine on your beach towel – a fair mistake, as the American-style siren isn't easy to identify.

The Concert Hall activity, meanwhile, is all too brief – your child must simply remember the order in which four instruments play, then click on them in that order. The chance to repeat the activity here would have helped reinforce memory skills, while a progression to more instruments would have introduced some harder levels to extend the life of the package.

The game elements of most activities do at least change randomly to maintain your child's interest. In Animal Park, for example, where the



◆ The beach in *Wonder Land* is bursting with the happy sights and sounds of people enjoying themselves... and building astonishingly realistic sandcastles

animal noises are jumbled up, different animals appear each time you play.

Surrealism it has, levels it has not, so children won't live happily ever after with *Wonder Land*, but they learn to listen carefully.

Wonder Land

Age range: three to six

Contact name: Mindscape

Number: 01444 246333

Price: £24.99

Recommended hardware: 486 or faster, Windows 3.1, DOS 5.0 or later, SoundBlaster compatible soundcard, SVGA, 4Mb RAM, mouse

PC Answers Rating

73%

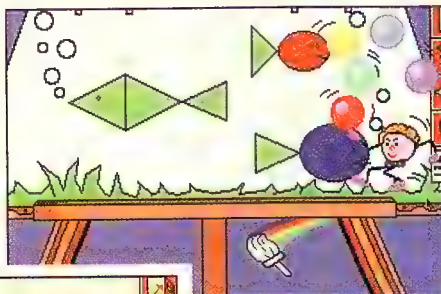
Playing with Shapes

There's a personality test in which you have to decide which shape most closely represents your character, from a selection comprised of a circle, square, triangle or squiggle. If you think you need to brush up on the characteristics of the first three, then *Playing with Shapes* is for you.

The program is one of seven new releases in the 'Create and Learn' series from VCI Software. Although in the software business for only a year, the company's initial wave of budget PC software has already featured strongly in Gallup's budget PC Top 20.

The series, VCI's first dedicated educational material, is designed to enable children to get the most out of PCs. *Playing with Shapes* itself encourages children to recognise and compare shapes according to size, colour and angle.

There are no levels to work through, but an exhaustive 23 separate layout, building and memory games should occupy junior for quite a while. There's also a degree of progression from shape to shape, with three circle games, four square and five



◆ The bright, bold colours are excellent, but the program's low screen resolution means the shapes have jagged edges

◆ Choose an activity from the game room with the giant, unlosable cursor – it's great for this age group, not to mention myopic parents

each for the triangle and rectangle. Most activities are 2D, and involve placing shapes in the correct position either within a picture or on a grid. There's also an excellent 3D activity where you have to manipulate shapes until they fit in the on-screen guide lines... this is a superb activity for coordination and spatial reasoning.

Your guide through all this is Cleo the Clown, an oddball wearing only a bow tie and a

silly grin. He has an encouraging, 'try, try again' approach, but neither he nor the brief on-screen help notes explain activities properly, so it's just as well that parents are encouraged to play along.

In fact, the manual's over-the-top section 'talking your child through the games' literally scripts parents' comments, word for word, as they watch junior manipulate the shapes. Heaven forbid anyone should need this much help.

Finally, beware the pair-matching game which has Cleo as your opponent. No, he doesn't cheat – we found that the program crashed consistently after playing a game and leaving the PC for a few minutes, an irritating fault.

Playing with Shapes isn't flash, and it isn't perfect, but it will teach young children everything there is to know about basic shape recognition. Whether it helps you decide if you're a circle or a triangle is another matter entirely.

Playing with Shapes

Age range: three to seven years

Contact name: VCI software

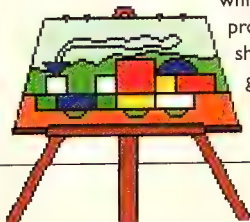
Number: 01923 255558

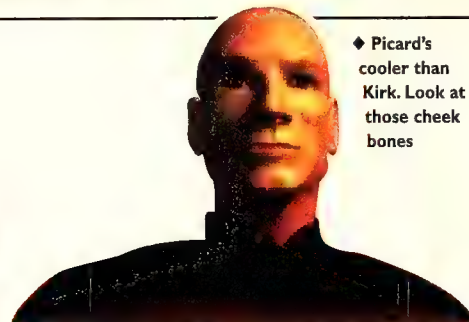
Price: £24.99

Recommended hardware: 386 or higher, DOS 5.0, VGA, mouse, soundcard, printer optional

PC Answers Rating

63%





◆ Picard's cooler than Kirk. Look at those cheek bones

Star Trek: The Next Generation

RECOMMENDED
Get the most out of your PC at home
PC ANSWERS

The world's obsession with *Star Trek* shows no signs of abating. James Binns boldly goes to that place yet again

Over a year has passed since the *Star Trek: TNG* series was axed, and you could say this long-awaited release from Microprose is a tad overdue. Now, though, you can follow the voyages of Captain Picard and the crew of the Starship Enterprise... without any of the awful *Deep Space 9* getting in the way. And, though the stories vary in each episode, the song remains the same.

Picard and his band of merry men aimlessly drift around the galaxies, encountering both peaceful and hostile aliens and generally playing the space equivalent of the UN for the Federation. And, uncannily like the show, you can count on each expedition to promote a strong moral theme, such as universal peace or love among the natives. The game continues where the TV series left off. The difference is that it's you who's called 'Sir' – the hot seat at last. *Star Trek's* strength lies not in its special effects, ham acting (pre-*Next Generation*) and cool characters, it's the depth of storyline which has kept it on course for 30 years.

Your journey begins with the information that two Garidian ships have entered federation space; a possible problem, as the

Garidians and the volatile Romulans maintain close links. Picard allows the three Garidians from the first ship to board the Enterprise after witnessing the bad Garidians destroying their own fleeing ship. The three good ones plead for political asylum. That's where you jump in. Decisions, decisions. This

is the main plot, but – as usual with *TNG* – sub-plots meander in and out. Your objective is to find the lost fifth scroll.

In this point and click adventure, you control any one of the seven characters from Picard through to Troi, Laforge and Data. The

You can count on each expedition to promote a strong moral theme, such as universal peace or love among the natives



◆ Non-federation ships should be dealt with appropriately. Kill the alien scum



◆ If you don't have Sky, this will evoke memories of BBC2 6.00pm on Wednesday

◆ Choose to use phasers or photon torpedoes. You can also check for damage to the shields, or any loss of power that the ship may suffer

objective is to navigate the ship through space, avoiding conflict with Romulans, Klingons and any other alien beings. Teams from the ship must also be beamed down to

carry out specific missions on planets and crafts. Repeatedly, you find the crew in danger and, as captain, you have to make preset decisions in order to bring them back safely.

On the bridge itself, there are two main gameplay elements. Firstly, there are strategic features such as 3D space navigation and galactic planning. You decide when to boost the shields, when to transfer or when to attack and the other minions willingly obey and carry out your every word. Communication is the other main concern – you can hail other ships or planets to set up a communication link or receive incoming messages. These appear frequently, and each message requires a fast response.

The main characters are visibly and aurally recognisable, with the voices of the real actors and the characteristics and behaviour of the crew all faithfully recreated. Sound and music are also worth a mention – they add so much authenticity.

It's the attention to the smallest detail that makes *Star Trek: TNG* such an excellent game. Hard core Trekkies are certain to buy it, and even interested bystanders should prick up their ears. The depth of narrative ensures that it always remains involving – for example, you even get to investigate the history of alien cultures. There's plenty to do and see, and it's all gorgeously executed. Be honest, what more could you ask for? **PC ANSWERS**

◆ Space, the ultimate frontier. Your mission is to boldly go where no man has gone before, in the name of peace

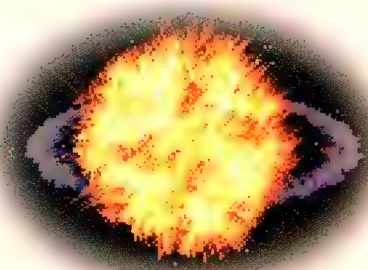
Star Trek: The Next Generation

Publisher: Microprose
Tel: 01454 326537
Price: £49.99
Requirements: minimum VGA, 386 or better,
4Mb RAM, CD-ROM drive

PC Answers Rating

90%

FX Fighter



PLATINUM AWARD
Get the most out of your PC at home
PC ANSWERS



◆ Gratuitous violence between a couple of redheads, Jake versus Kiko. How about a throw move, followed by the aptly-named ear slap move? Great purple pants



Arcade guru Steve Bough finds a different sort of beat-'em-up and comes up bloody but smiling

Traditionally, the PC hasn't been a platform for that most hallowed of arcade formats, the beat-'em-up. We've had conversions which match the coin-ops, including the brilliant *Mortal Kombat 2* and *Super Street Fighter 2 Turbo*, but we've never had a home-grown alternative, something to call our own. *FX Fighter* is set to change all that. Here, at last, is a game tailored to your PC's shortcomings and ramped up to show off exactly what a bog-standard graphics card can do with a little clever programming. If you have console-owning friends, invite them over and and mock them cruelly.

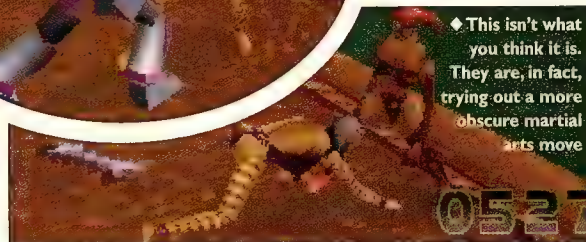
There's no point dwelling on the storyline, seeing as it's about as sophisticated as any other martial arts tournament. Tough guys and gals get into a ring and hit, kick and slap each other for glory and the greater good of whatever empire they represent. There's a boss character called Rydor who owns a super-weapon-planet-death-star-type-thing, and if you defeat him you might just get to own it. Before meeting the big guy himself, you've got to steadfastly wade your way through all manner of animal, vegetable and mineral opponents. That's about it really.

Except there's much more to *FX Fighter* than hammering away at punch buttons. For starters, there's the presentation. Over the last year there's been a generational improvement in terms of graphics on the consoles and in the arcades. It started with Sega's *Virtua Fighter*, followed closely by the likes of *Tekken* on the Sony Play Station. Rather than offering large sprites standing toe to toe, these games present fighters as texture mapped polygonal models with roving cameras, selecting the best view point to check out smooth motion captured players. Argonaut, maker of *FX Fighter*, has been boasting about its proprietary graphics library BRender for over a year now – this is the first game to really show it off. In a single leap, the PC's caught up with the competition. The visuals are unquestionably brilliant, and you can't help but think it's a bit of a comedown for Argonaut to have bothered with pre-rendered cut-aways... shiny art from a CD isn't a touch on their meaty engine.

So how has Argonaut tackled the perennial problems posed by PC beat-'em-ups? Problems, what problems? First up, there aren't



◆ Cyben 30 shows off his heli-spin move. To activate this hit, punch repeatedly and spin those arms. High jinks aplenty

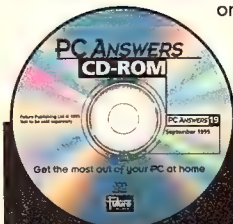


◆ This isn't what you think it is. They are, in fact, trying out a more obscure martial arts move

many six-button joypads, so arcade conversions – like *Super Street Fighter 2 Turbo* – end up taking shortcuts to cover the range of kicks and punches offered by their coin-op cousins. Similarly, coin-op conversions to the PC are impossible on keyboard, as most of us are born with a paltry ten fingers – damn these puny gene pools. Different strength and style blows are available from the direction you push when you go into the move. Many special moves are of the back, forward, punch, punch school, and you can pull off just about everything from the keyboard.

The fights are exquisitely balanced with plenty of combos and a learning curve which, yes, really does curve. There's loads to master, enough variety in skill levels to keep you playing the

one-player game – there's also a top-notch two-player game. *FX Fighter*'s the first home-grown beat-'em-up that'll make console owners weep. Buy it. **PC ANSWERS**



You can find a demo of *FX Fighter* in the Games Section on the CD-ROM

FX Fighter

Publisher: GTE Interactive Media
Number: 0171 931 3000
Price: £39.99
Recommended: minimum VGA 486, DX01, 4Mb, CD-ROM drive

PC Answers Rating

91%



Micro Machines 2

Move into the fast lane for the speediest racing game around. Steve Bough finds he's just too big to fit into these small cars

Micro Machines 2 – MM2 – is the sequel to last year's disappointing release from Codemasters. Thankfully, the reason for the shoddy conversion from the consoles of younger brother, *Micro Machines*, has been recognised. MM2 is a vast improvement, even though the idea remains the same. You get to race a variety of minute cars around challenging courses. Obviously, the aim is to come first, but as you'd expect, plenty of obstacles stand between you and the finishing line. Choose one of the 16 characters which people this miniature world and put your foot on the gas.

Totally revamped for the PC, MM2 delivers ultra-fast racing, with so many options that it's hard to get bored.

For each course, any one of 15 types of vehicle is supplied, all specifically designed to cope with the particular terrain. Race on sand and you drive dune buggies, turntables require Formula One cars and when you take to the skies you guide your helicopter around a winding maze. You can even hit the water and gardens in a hovercraft. In total, 17 contrasting types of terrain test your driving skills – each course handles differently and boasts its own weather conditions. The key to winning any race is familiarising yourself with the course. Once you know the layout things become much less hazardous – you know where to brake, where to accelerate and when to cheat. Well, that's the theory...

MM2 has plenty of playing options. You can race head to head, progressing through each course as it comes. You're given three lives – lose a race and you lose a life, too. Learning the course layouts is understandably challenging – you've got everything to lose. Also featured is a super league tournament option and a challenge race with four other racers on the



◆ Avoid the beans, peas and cashew nuts if you want to avoid a nasty case of indigestion – or a nasty crash

◆ The time trial gives you the chance to beat the best lap, which in this case is five seconds. To beat this you need to drive like Damon Hill... in a very fast car

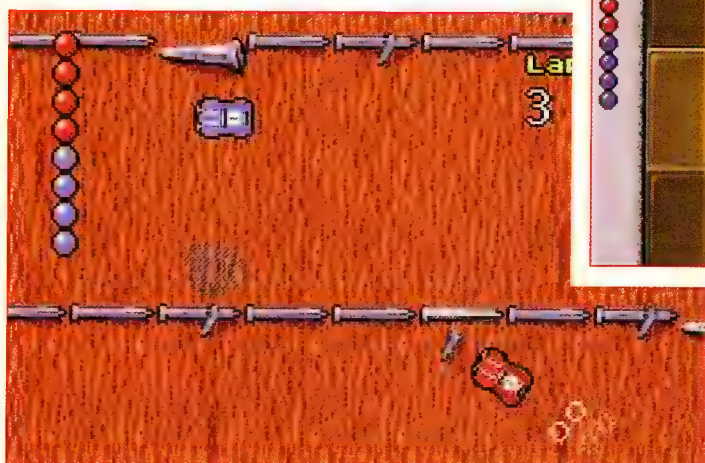


track. Add a time trial to all of this, and whether you play on your own or against someone else it's always fun and quite difficult.

Newly introduced in the PC version is a construction kit. With this, you can edit existing courses and add more obstacles, twists and turns. Creating a new course is just as easy – simply set up your desired layout and then add any deviations you want. Additionally, your vehicle can be modified to suit your specific racing technique. And if you're really feeling malicious and want to make sure nobody else has a hope in hell of winning, just make up your own rules – just do whatever you like.

With over 51 race tracks, CD sound and four playing options, *Micro Machines 2* is enough to keep you busy for a long time. The construction kit adds greater depth by enabling you to personalise the game. And, even better, up to 16 players can take part – that's if you could ever squeeze 16 people around a PC. MM2 is great

because it's all about having fun. Within minutes you're at ease and playing comfortably, as it's simply a case of accelerate, brake and turn left or right. In that respect, its best asset is its playability. You can play it time and time again and not get bored, by altering the courses, rules and vehicles as you go along. If you're after raw fun then you've certainly come to the right place. **PC ANSWERS**



◆ The idea in head to head is to race against one other driver and get ahead of him. When you can't see your rival on-screen, you get the bonus point



◆ To qualify for the next race, you must finish either in first or second place. If you're not familiar with the track, this is far easier said than done

Micro Machines 2

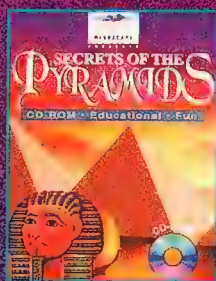
Publisher: Codemasters
Number: 01926 814132
Price: £44.99 GD-ROM, £39.99 HD
Recommended: minimum VGA, 386 or better,
4Mb RAM

PC Answers Rating

82%

boredom busting

Your PC is only as good as the software you run on it. Below is a brief selection from the massive Mindscape range. Call the number below for the full catalogue and find out exactly what your PC can do.



Secrets of the Pyramids

The mysteries of Ancient Egypt are revealed in this fascinating, educational adventure that details the lives and beliefs of a remarkable civilisation.

PC CD for Windows, Mac CD
RRP £24.99



The Animals 2

Journey through the multimedia wilds of the animal kingdom! Experience all types of creatures through 120 full motion videos, rich photos and CD-quality sound.

PC CD for Windows, Mac CD
RRP £39.99



Mario Is Missing

Inquiring young minds will love this challenging, interactive puzzle adventure through the world of Super Mario Bros. Aimed at children 7 years and up.

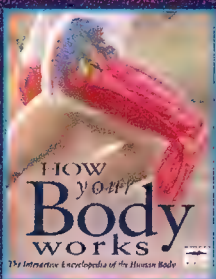
PC, PC CD RRP £24.99
Also available in this range: Mario Teaches Words, Mario's Playschool, Mario Teaches Sums and Mario's Time Machine.
4/5 - CD-ROM Kids



Warriors

Imagine the best fighters ever in head to head battles on a strange mystical islands and only one can survive! Dazzling 3D Bio Motion graphics and realistic animations will have you kicking lumps out of anything you've played before.

PC CD RRP £39.99,
PC DOS RRP £34.99
'one hell of a game' - PC Format



How Your Body Works

You'll find answers to all the health questions you've ever asked in this innovative, entertaining guided tour of the human body. Simulations, animations, videos, music and a voice over make this a compelling package for all the family.

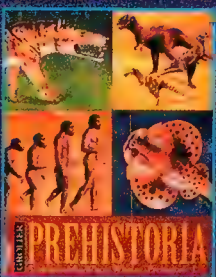
PC CD for Windows, Mac CD
RRP £39.99
5/5 - CD-ROM Kids



Jagged Alliance

Combining a delicate mix of high technology, tactical manoeuvres and strategic planning with a nerve-racking storyline, Jagged Alliance will take your strategic and role-playing skills to their limits.

PC CD RRP £39.99,
PC DOS RRP £34.99
'explosively good' 86% - PC Attack



Prehistoria

Journey back 500 million years to the earth's distant past. Captivating, intriguing and packed with prehistoric information, this is the most awe-inspiring adventure imaginable.

PC CD for Windows, Mac CD
RRP £69.99
83% - PC Format



Stone Prophet - Ravenloft 2

Unlock the Heculean power of your CD-ROM to unleash more ghoulish hours, more unpredictable plots and puzzles than any other AD & D adventure EVER!

PC CD RRP £44.99
84% - PC Gamer



Beethoven's 5th

Experience music as you've never experienced it before and enter a new world of understanding and appreciation. This is a vital interactive multimedia product packed with majestic sound, in-depth commentary, video footage and on-screen text.

PC CD for Windows RRP £39.99
88% - PC Format


For further information on Mindscape's extensive product range please contact:



Mindscape UK, Priority House,
Charles Avenue, Maltings Park,
Burgess Hill, West Sussex,
RH15 9TQ. Tel: 01444 246333
Fax 01444 248996

MECH WARRIOR 2

Giant killer robots battle in 3D! Exclusive review



PLUS! EA's *Rugby World Cup*,
the best 3D engine ever,
Dungeon Master 2, *Across The Rhine*, a *Full Throttle*
solution and masses more!

PC GAMER

August issue on sale Thursday 27 July

Hi-Octane



◆ Race through the pits to top up your fuel and weapons

ancy a kamikaze road race against seven other lunatics?
Steve Bough puts his foot on the gas and ups the mortality rate

The game Bullfrog managed to keep a secret appeared out of nowhere in a flash. *Hi-Octane* is an all-action racing thrash that combines technical innovation with fast, cruel driving action. The objective is to compete against the eight other players, computer controlled or human – across linked machines – and, obviously, cross that finishing line first. Your combat vehicle comes equipped with high-tech weaponry, shields and turbo chargers, but so do your opponents' vehicles, so expect a fight.

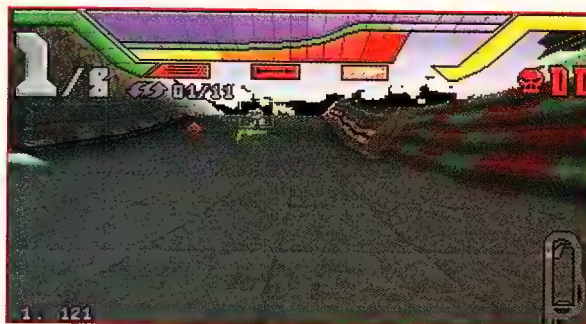
Set in the 21st century, *Hi-Octane* puts you behind the wheel of a futuristic hover car capable of speeds of over 200mph. There are six tracks to race on, and you get to set the number of laps, from

one to 40. As genres go, the game can be described as more of a race combat game than a straightforward racing simulation. This means there are two ways to win. You can either just race to be the first to cross the line, and run the risk of being gunned down in the process. Or you can just spend the entire

race spoiling and win through force of arms.

Tracks weave through the tight streets of the city to the open wastelands and deserts beyond. On each track there are plenty of hidden secret areas, where you can find hidden bonus items, such as fuel and ammunition or, even better, shortcuts. Finding them is a case of trial and error, as numerous walls may need to be destroyed before they're revealed. Straying from the track is essential for seasoned racers and gives you the crucial edge over your rivals. The scenery's gorgeously texture mapped, eerily reminiscent of the *Magic Carpet* engine. Bizarrely enough, though, the landscape constantly changes with holes and earthy pits all over the place.

Your car is a futuristic hover vehicle. Aside from its armoured shielding, it also has a missile launcher and chain gun. You can collect power-ups for weapons, and with a combination of skilled driving and marksman-like accuracy, the race should be yours. Shooting at opponents weakens their armour and when their shields are at their lowest, lock on with your missiles and fire away. Within seconds a recovery vehicle is on the way to patch

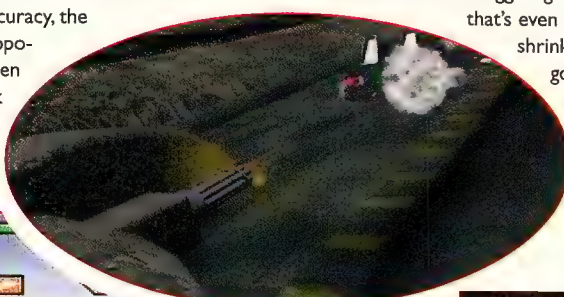


◆ Guide your hover vehicle through the narrow streets and barren wastelands. Weave from side to side to avoid the gunfire

them up, but you have now leaped into the lead. Of course, they try to gun you down if they get behind you – in your early games expect to suffer the consequences. When the cockpit shudders, you're hit. Your shields can be replenished, but, theoretically, the more you race the less you're hit. Throughout the game you get to choose between six different vehicles, each unique in appearance and with its own combat/handling attributes. There's one obvious flaw – the floaty feel of the cars. Sure, they're hover cars and they're meant to float, but the result of this is that the game just doesn't feel meaty or skiddy enough.

What makes the game appealing is the eight-player combat option – *Hi-Octane*'s network connections mean you can invite your mates round for a game. Although this is no longer a rare gaming feature, it's still one well worth exploring, as it adds an extra dimension to *Hi-Octane*'s long-term playability. The only problem is that for each network site you need a new copy – yep, it's going to be a pretty pricey gaming session.

Hi-Octane's main problem is processor demands – it requires a 486 DX2-66 upwards to run effectively. Playing on anything less makes for a sluggish game, which isn't half as much fun – and that's even if you strip out the detailing and shrink the window. There are a number of good points: the multi-player options, the excellent sound effects, the range of weapons and tracks. But Bullfrog hasn't excelled here; *SlipStream 5000* plays better and is undoubtedly the better buy. **PC ANSWERS**



◆ The objective of the game: shoot them before they shoot you. Simple

◆ As well as the first person perspective, there's also a couple of semi-chase view options

Check out the demo of *Hi-Octane* in the Games Section on the CD-ROM

Hi-Octane

Publisher: Bullfrog

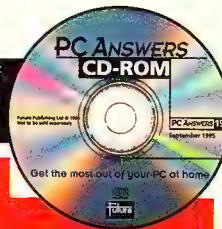
Tel: 01483 579399

Price: £44.99

Requirements: minimum VGA, 486 or better, CD-ROM drive, SoundBlaster

PC Answers Rating

80%



Get the most out of your PC at home

PC

ANSWERS

19

September 1995

PC

ANSWERS

19

September 1995

Bug hunt!

- On the trail of bug-free software
- Discover what you can do to beat the bugs
- Fatal errors! Software glitches that can kill

Amazing disks and CD-ROM

including *ThunderByte AntiVirus Software*, *3D Construction Kit* and a demo of the brilliant *FX Fighter*

Better than life

Digital Image Design – from games designers to military sim specialists

Virtual art

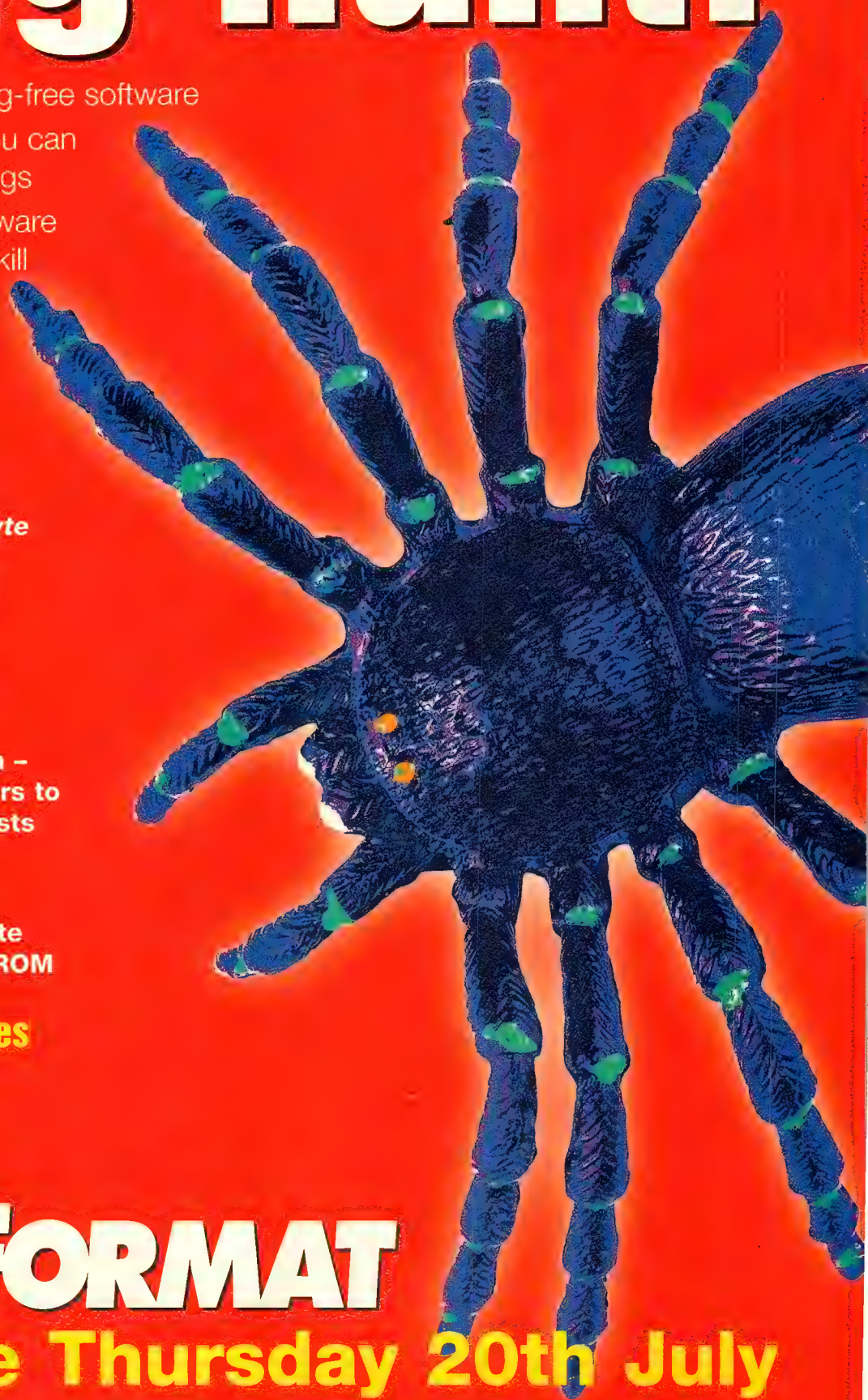
Explore your favourite art galleries on CD-ROM

On-line celebrities

E-mail addresses of the stars

PC FORMAT

On sale Thursday 20th July



HOBBYKIT LTD

UNIT 19 CAPITOL INDUSTRIAL PARK
CAPITOL WAY, LONDON, NW9 0EQ

CREDIT CARD HOTLINE

0181 - 205 7485

E-MAIL: HOBBYKIT@DELPHI.COM

FAX NUMBER: 0181 - 205 0603

586 P90 COMPUTER SYSTEM

(£782.98 + VAT) = £ 920

586 P90 NEXTGEN MOTHERBOARD ■ 4MB SIMM (UPGRADEABLE TO 256MB) ■ 540MB IDE
HARD DISC (MODE 3 / FAST ATA) ■ 3½" 1.44 FLOPPY DISC DRIVE ■ IDE CONTROLLER
WITH 2HDD/2FDD/2S/1P/1G ■ 14" SVGA MONITOR NON-INTERLACED (UPTO 1024 x 768)
LOW RADIATION ■ 1MB SVGA GRAPHICS (UPGRADEABLE TO 2MB) ■ AT 102 KEYBOARD
DESKTOP CASE ■ 3 BUTTON MOUSE ■ DOS 6.0 ■ 1 YEAR RETURN TO BASE WARRANTY.

WE CAN BUILD ANY SYSTEM FOR YOU. A SYSTEM CAN BE SUPPLIED WITHOUT A MONITOR OR KEYBOARD, IF YOU ALREADY HAVE THEM, OR WE CAN ADD A FAX/MODEM
OR A MULTIMEDIA SYSTEM. PLEASE CALL FOR AN IMMEDIATE QUOTATION. SYSTEMS SUPPLIED WITH A 12 MONTHS RETURN TO BASE WARRANTY.

FAX / MODEM

SEND & RECEIVE FAX/MODEM.

FREE SOFTWARE & BT LEAD. CALL FOR TECHNICAL
DETAILS. NOT BAPT APPROVED UNLESS STATED

2400EXT-BABT (£ 21.28+VAT =) £ 25
EXTERNAL - 2400 MODEM ONLY - BABT

9648FM (£ 22.98+VAT =) £ 27
INTERNAL - SEND:9600 RECEIVE:4800 / 2400 MODEM

1414FM (£ 51.06+VAT =) £ 60
INTERNAL - 14400 - V.17, V.32bis

1414FMV - VOICE (£ 63.83+VAT =) £ 75
INTERNAL - 14,400 - V.17, V.32bis - WITH VOICE

1414FM - BABT (£ 72.34+VAT =) £ 85
INTERNAL - 14,400 - BABT

1414FME - BABT (£ 89.36+VAT =) £ 105
EXTERNAL - 14,400 - BABT - WITH SERIAL CABLE

2814FM (£ 127.66+VAT =) £ 150
INTERNAL - 28800 - V.34 - 14400 FAX

2814FM - BABT (£ 170.21+VAT =) £ 200
INTERNAL - 28,800 - V.34 - 14,400 FAX - BABT

2814FME - BABT (£ 195.74+VAT =) £ 230
EXTERNAL - 28,800 - V.34 - 14,400 FAX - BABT

MULTIMEDIA

MPEG VIDEO CARD (£170.21+VAT =) £ 200
MPEG1 FOR VIDEOCD & CDI MPEG MOVIES

TV TUNER / VIDEO CARD (£170.21+VAT =) £ 200
DISPLAY, CAPTURE & EDITS VIDEO

MULTIMEDIA SYSTEM (£136.17+VAT =) £ 160
DUAL SPEED IDE CD ROM WITH 16 BIT
SOUNDCARD + 4W SPEAKERS

SOUNDCARD-16 BIT (£ 51.06+VAT =) £ 60
MULTI CD INCLUDING IDE - SOUNDBLASTER
COMPATIBLE, STEREO, WAVE UPGRADEABLE
MPU401 WITH INSTALLATION SOFTWARE

IDE CD ROM (£ 76.60+VAT =) £ 90
DUAL SPEED - PLUGS INTO IDE.

QUAD IDE CD ROM (£137.17+VAT =) £ 160
QUAD SPEED - PLUGS INTO IDE.

IDE CD INTERFACE (£ 9.36+VAT =) £ 11

CR 562B (£ 93.82+VAT =) £ 110
PANASONIC DUAL SPEED CD ROM

CD ROM INTERFACE (£ 15.32+VAT =) £ 18
PANASONIC / SONY / MITSUMI

SPEAKERS - 80W PMPO (£ 32.34+VAT =) £ 38

SPEAKERS - 4 WATTS (£ 10.21+VAT =) £ 12

MIDI CABLE (£ 15.32+VAT =) £ 18

ACCESSORIES

5W* ADAPTOR KIT FOR 3½" FDD (£ 5.11+VAT =) £ 6

5W* TRAY ONLY FOR 3½" FDD (£ 3.40+VAT =) £ 4

POWER LEAD FOR 3½" FDD (£ 2.55+VAT =) £ 3

IDC PIN TO EDGE CONNECTOR PCB (£ 2.55+VAT =) £ 3

SHORT FDD CONTROLLER CABLE 2' (£ 2.55+VAT =) £ 3

POWER SPLITTER - 2 x 5W* (£ 3.40+VAT =) £ 4

POWER SPLITTER - 1 x 5W* / 1 x 3W* (£ 3.40+VAT =) £ 4

H D D CABLE - MFM / RLL / ESDI (£ 5.11+VAT =) £ 6

HDD CABLE-MFM/RLL-2 DRIVES (£ 7.66+VAT =) £ 9

SCSI H D D CABLE - 2 DRIVES (£ 5.11+VAT =) £ 6

IDE HDD CABLE - SHORT - 2 DRIVES (£ 3.40+VAT =) £ 4

IDE H D D CABLE - LONG - 2 DRIVES (£ 5.11+VAT =) £ 6

KEYBOARD EXTENSION CABLE (£ 1.70+VAT =) £ 2

PS 2 KEYBOARD ADAPTOR (£ 3.40+VAT =) £ 4

SERIAL MOUSE TO PS 2 ADAPTOR (£ 5.11+VAT =) £ 6

VGA EXT CABLE - 9 PLUG/9 SKT (£ 3.40+VAT =) £ 4

VGA EXT CABLE - 15 PLUG/15 SKT (£ 5.11+VAT =) £ 6

PARALLEL PRINTER CABLE (£ 5.11+VAT =) £ 6

SERIAL PRINTER CABLE (£ 5.11+VAT =) £ 6

MODEM CABLE - 25 PLUG/9 SKT (£ 5.11+VAT =) £ 6

NULL MODEM CABLE - 25 SKT/25 SKT (£ 6.81+VAT =) £ 8

MOTHERBOARDS

586 PCI - BOARD ONLY (£131.91+VAT =) £ 155
SUPPORTS PENTIUM 75 / 90 / 100. 256K CACHE
WITH INTEGRATED ENHANCED IDE CONTROLLER

486 PCI - BOARD ONLY (£ 97.87+VAT =) £ 115
PCI + ISA SUPPORTS DX4-100
WITH INTEGRATED ENHANCED IDE CONTROLLER

486 VIP - BOARD ONLY (£ 93.62+VAT =) £ 110
VESA + ISA + PCI

486VESA (VL) + 256K CACHE & ZIF SOCKET
486VL WITH 30 PIN & 72 PIN SIMMS

486VL - BOARD ONLY (£ 72.34+VAT =) £ 85

386SX-40 (£ 51.06+VAT =) £ 60

SIMM MEMORY - 72 PIN & 30 PIN £ CALL

CPU'S & FANS

486SX-33 (5V) (£ 38.30+VAT =) £ 45

486DX2-50 (5V) (£ 51.06+VAT =) £ 60

486DX2-66 (5V) (£ 69.57+VAT =) £ 70

486DX2-80 (3.45V) (£ 97.87+VAT =) £ 115

486DX2-80 (5V) (£ 72.34+VAT =) £ 85

486DX4-100 (3.45V) (£ 110.64+VAT =) £ 135

486 HEATSINK WITH FAN (£ 7.66+VAT =) £ 9

586 HEATSINK (FOR P75/90/100) (£ 9.36+VAT =) £ 11

CONTROLLER CARDS PCI & VL (VESA)

PCI - SVGA 1Mb - CL5434 (£ 72.34+VAT =) £ 85

PCI - SVGA 1Mb - T9440 (£ 59.57+VAT =) £ 70

PCI - IDE - 4HDD ONLY (£ 29.78+VAT =) £ 35
SUPPORTS MODE 3

VL - IDE - CACHE - DC680C (£ 92.77+VAT =) £ 109
UPTO 16M CACHE, 4HDD / 2FDD, WD1003 EMULATION

VL - IDE - MULTI I/O (£ 29.79+VAT =) £ 35
4IDE/2FDD/2S/1P/1G HIGH SPEED 2S + BI-DIRECTIONAL IP
SUPPORTS MODE 3 HDD & IDE CD ROM

VL - IDE (£ 15.32+VAT =) £ 18
2HDD/2FDD/2S/1P/1G - SUPPORTS MODE 3

VL - SVGA - 1Mb T9440 (£ 59.57+VAT =) £ 70

VL - SVGA - 1Mb CL5429 (£ 59.57+VAT =) £ 70

1MB VIDEO MEMORY - SOJ (£ 38.30+VAT =) £ 45

ADD ON CARDS - ISA

IDE - 16 BIT - 2HDD/2FDD/2S/1P/1G (£ 10.21+VAT =) £ 12

IDE - 16 BIT - 2HDD/2FDD/2S/1P/1G (£ 15.32+VAT =) £ 18
HIGH SPEED SERIAL + BI - DIRECTIONAL PARALLEL

IDE - XT - 8 BIT (£ 34.04+VAT =) £ 40

IDE - CACHE - DC600C + FDD (£ 63.83+VAT =) £ 75
UPTO 16M CACHE (SIMM). DISK LINKING & MIRRORING

SCSI 1 & 2 - CACHE - DC800B (£148.94+VAT =) £ 175
UPTO 16M CACHE - ADAPTEC 1540/1542 COMPATIBLE

XT - RLL - HDD ONLY (£ 30.64+VAT =) £ 36

AT MFM - 2xFDD / 2xHDD (£ 29.79+VAT =) £ 35

AT RLL - 2xFDD / 2xHDD (£ 29.79+VAT =) £ 35

AT RLL - 2 x HDD ONLY (£ 18.72+VAT =) £ 22

ESDI - WD1007 - WITH FDD (£ 42.55+VAT =) £ 50

SERIAL CARD - 2 PORT (£ 11.91+VAT =) £ 14

PARALLEL CARD - 2 PORT (£ 10.21+VAT =) £ 12

PARALLEL CARD - 1 PORT (£ 12.77+VAT =) £ 15

SELECTABLE IRQ 5,7,9,10,11,12 or 15

INPUT DEVICES

COLOR HAND SCANNER (£119.15+VAT =) £ 140

2 BUTTON MICROSOFT MOUSE (£ 18.72+VAT =) £ 22

3 BUTTON MOUSE + DRIVERS (£ 5.96+VAT =) £ 7

3 BUTTON MOUSE + DRIVERS + MAT (£ 8.51+VAT =) £ 10

TRACKBALL - DESKTOP TRACKERBALL (£ 14.47+VAT =) £ 17

AT 102 KEYBOARD - WITH TRACKBALL (£ 33.19+VAT =) £ 39

AT 102 KEYBOARD - TACTILE (£ 17.02+VAT =) £ 20

AT 102 KEYBOARD - MEMBRANE (£ 11.06+VAT =) £ 13

NEW ARRIVALS

ZIP DRIVE - IOMEGA (£144.68+VAT =) £ 170

ZIP CARTRIDGE - 100 MB (£ 13.61+VAT =) £ 16

340MB BACKPACK (£200.00+VAT =) £ 235

420MB BACKPACK (£314.89+VAT =) £ 370

BACKPACK IS AN EXTERNAL HARD DRIVE SYSTEM
PLUGS DIRECTLY INTO THE PARALLEL PORT

PENTIUM MOTHERBOARDS - FROM (£225.53+VAT =) £ 265

PENTIUM PROCESSORS - FROM (£314.89+VAT =) £ 370

NETWORK CARDS - FROM (£ 21.28+VAT =) £ 25

UNINTERRUPTABLE P S U - FROM (£ 80.85+VAT =) £ 95

EXTERNALS - 250VA / 425VA / 600VA

COMPUTER CASES

WITH PSU & 3 DIGIT DISPLAY

DESKTOP 2 x 3½" x 3 x 5½" (£ 38.30+VAT =) £ 45

MINI TOWER 3 x 3½" x 2 x 5½" (£ 38.30+VAT =) £ 45

MIDI TOWER 3 x 3½" x 3 x 5½" (£ 46.81+VAT =) £ 55

TALL TOWER 2 x 3½" x 6 x 5½" (£ 80.85+VAT =) £ 95

MULTIMEDIA WITH SPEAKERS (£ 80.85+VAT =) £ 95

TAPE STREAMER

250 Mb - INTERNAL - IOMEGA (£ 97.87+VAT =) £ 115

250 Mb - EXTERNAL - IOMEGA (£182.98+VAT =) £ 215

350 Mb - INTERNAL - 5W* ONLY (£110.64+VAT =) £ 130

700 Mb - INTERNAL - IOMEGA (£123.40+VAT =) £ 145

700 Mb - EXTERNAL - IOMEGA (£221.28+VAT =) £ 260

800 Mb - INTERNAL - TRAVIAN (£165.96+VAT =) £ 195

PARALLEL PORT VERSIONS AVAILABLE

PRE-FORMATTED TAPES AVAILABLE - PLEASE CALL

HARD DISC DRIVES

420 Mb - IDE (£114.89+VAT =) £ 135

540 Mb - IDE (£131.91+VAT =) £ 155

720 Mb - IDE (£153.19+VAT =) £ 180

850 Mb - IDE (£165.96+VAT =) £ 195

1 Gb - IDE (£251.06+VAT =) £ 295

REMOVABLE MOUNTING KIT - 3½" IDE (£ 14.47+VAT =) £ 17

MOUNTING KIT (RAILS/BEZEL/LED) (£ 5.96+VAT =) £ 7

MOUNTING KIT (RAILS ONLY) (£ 2.55+VAT =) £ 3

FLOPPY DISC DRIVES

3½" 1.44M - INTERNAL (£ 22.13+VAT =) £ 26

3½" 720K - INTERNAL (£ 25.53+VAT =) £ 30

3½" 720K - INTERNAL - SUITABLE FOR XT's (£ 38.30+VAT =) £ 45

3½" 720K - EXTERNAL - DRIVE ONLY (£ 22.13+VAT =) £ 26

5¼" 360K INTERNAL - GREY OR BLACK (£ 17.02+VAT =) £ 20

5¼" 1.2M - INTERNAL (£ 38.30+VAT =) £ 45

3½" 1.44 DISKS - PACK OF 10 (£ 4.26+VAT =) £ 5

MONITORS

15" SVGA - COLOUR 0.28" DP (£217.02+VAT =) £ 255

NON INTERLACED / LOW RADIATION

14" SVGA - COLOUR 0.28" DP (£161.70+VAT =) £ 190

NON INTERLACED / LOW RADIATION

14" SVGA - MONO (£ 76.60+VAT =) £ 90

OTHER SIZES ARE AVAILABLE - PLEASE CALL

MONITORS ARE SUPPLIED WITH A 1 YEAR ON
SITE OR RETURN TO BASE WARRANTY

GRAPHICS CARDS

HERCULES MONO (£ 10.21+VAT =) £ 12

V G A - 256K - 16 BIT (£ 21.27+VAT =) £ 25

S V G A - 512K - 16 BIT (£ 27.23+VAT =) £ 32

S V G A - 1Mb - 16 BIT (£ 46.81+VAT =) £ 55

OPERATING SYSTEMS

SUPPLIED WITH MANUALS

MS DOS 3.2 - LICENSED - 3½" DISCS (£ 4.26+VAT =) £ 5

MS DOS 3.3 - LICENSED - 5¼" DISCS (£ 4.26+VAT =) £ 5

MS DOS 4.01 - LICENSED - 3½" DISCS (£ 6.81+VAT =) £ 8

MS DOS 6.0 - ORIGINAL - 3½" DISCS (£ 21.28+VAT =) £ 25

MS DOS 6.22 - ORIGINAL - 3½" DISCS (£ 34.04+VAT =) £ 40

WINDOWS FOR WORKGROUPS (£ 51.06+VAT =) £ 60

ALL PRICES ARE SUBJECT TO CHANGE WITHOUT
PRIOR NOTICE. PLEASE CALL FOR LATEST PRICES.
ALL GOODS ARE COVERED BY A RETURN TO BASE WARRANTY

POSTAGE (PER ORDER)

£ 6 FOR 48 HOUR DELIVERY - NOT WEEKENDS

£ 9 FOR NEXT DAY DELIVERY - NOT WEEKENDS

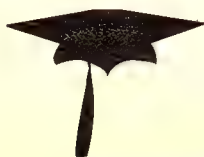
PAYMENT BY CHEQUE

PLEASE PRINT YOUR CHEQUE GUARANTEE CARD
NUMBER ON THE REVERSE OF THE CHEQUE

PRICING

PRICES SHOWN () EXCLUDE VAT @ 17.5%
PRICES IN COLOUR INCLUDE VAT @ 17.5%

PLEASE SEND A4 or A5 SAE (19p or 25p) FOR 16 PAGE COMPREHENSIVE PRODUCT GUIDE / PRICE LIST



RIDGEWAY EDUCATIONAL MULTIMEDIA CD-ROMS

New Titles

ITN European Atlas - £35.00 + VAT = £41.13
Broderbund Living Book Series -
Berenstein Bears Get In A Fight - £29.00 + VAT = £34.08

Fun School Series

Maths for 7-11yrs - £18.00 + VAT = £21.15
Spelling for 7-16yrs - £18.00 + VAT = £21.15

5 foot 10 Pack Vol 3

Who Shot Johnny Rock, 1994 Sports Almanac, Hellcab, Beyond Planet Earth, Photomorph,
Mozart, National Parks of America, Singalong Kids 2 and Alien Invasion
£26.00 + VAT = £30.55

New Games

Flight Unlimited - £33.00 + VAT = £38.78
Hi - Octane - £33.00 + VAT = £38.78

Discs "Spiders" £3.00 + VAT = £3.53
When you buy 'Tales of Peter Rabbit' and
'Benjamin Bunny' for £15.00 + VAT = £17.63

Lifestyle Pack

Complete Guide to Gardening - £18.00 + VAT
Healthy Cooking £18.00 + VAT
Wines of the World £18.00 + VAT
National Parks of America £18.00 + VAT
ALL FOUR CDS FOR £25.00 + VAT = £29.38

KNOWLEDGE ADVENTURE

Jumpstart Kindergarten £28.00 + VAT = £32.90
Kids Encyclopedia £28.00 + VAT = £32.90
3D Dinosaurs £28.00 + VAT = £32.90
3D Body £28.00 + VAT = £32.90
Science Adventure II £28.00 + VAT = £32.90
The Discoverers £28.00 + VAT = £32.90
Bug & Insect Adventure £28.00 + VAT = £32.90
Magic Theatre £28.00 + VAT = £32.90

OXFORD UNIVERSITY PRESS

Concise Dictionary £32.00 + VAT = £37.60
Compendium £49.50 + VAT = £58.17
Oxford English Dictionary £360.00 + VAT = £423.00
Reference Shelf £49.50 + VAT = £58.17
Treasuries £32.00 + VAT = £37.60
Language Shelf £28.00 + VAT = £32.90

MICROSOFT

The Magic School Bus Explores:

The Human Body £32.00 + VAT = £37.60
The Solar System £32.00 + VAT = £37.60
Ultimate Haunted House £30.00 + VAT = £35.25
Ultimate Frank Lloyd Wright £39.00 + VAT = £45.83
Creative Writer £32.00 + VAT = £37.60
Fina Artist £39.00 + VAT = £45.83
Isaac Asimov's Ultimate Robot £33.00 + VAT = £38.78
Dangerous Creatures £33.00 + VAT = £38.78
Dinosaurs £30.00 + VAT = £35.25
Encarta 95 £30.00 + VAT = £35.25
Explorapedia £30.00 + VAT = £35.25
Cinemania 95 £33.00 + VAT = £38.78
Bookshelf 94 £25.00 + VAT = £29.38
Musical Instruments £33.00 + VAT = £38.78
Art Gallery £33.00 + VAT = £38.78
Ancient Lands £33.00 + VAT = £38.78
MS Golf £21.00 + VAT = £24.68
Composer Collection (Beethoven, Mozart & Schubert) £52.00 + VAT = £61.10

COMPILATION PACKS

5ft 10 Pack Vol 1 £26.00 + VAT = £30.55
5ft 10 Pack Vol 2 £26.00 + VAT = £30.55
One Stop Shop £26.00 + VAT = £30.55
CD Deluxe Pack £14.00 + VAT = £16.45
Typing/Chess/Althos £14.00 + VAT = £16.45

BRODERBUND

Math Workshop £28.00 + VAT = £32.90
Arthur's Teacher Trouble £14.00 + VAT = £16.45
Just Grandma and Me £14.00 + VAT = £16.45
Kid Pix Studio £32.00 + VAT = £37.60
Lil' Monster at School £25.00 + VAT = £29.38
New Kid on the Block £28.00 + VAT = £32.90
Ruff's Bone £28.00 + VAT = £32.90
Torloise & Hare £28.00 + VAT = £32.90
Arthur's Birthday £28.00 + VAT = £32.90
Harry and the Haunted House £28.00 + VAT = £32.90

DISCS

Birds and how They Grow £10.00 + VAT = £11.75
National Geographic Butterflies £10.00 + VAT = £11.75
National Geographic Farm Animals £10.00 + VAT = £11.75
National Geographic Dinosaurs £10.00 + VAT = £11.75
A Tree Through the Seasons £10.00 + VAT = £11.75
What air can do £10.00 + VAT = £11.75
Paper Bag Princess / Mud Puddle £15.00 + VAT = £17.63
Scary Poems for Rotten Kids £10.00 + VAT = £11.75
Aesop's Fables £10.00 + VAT = £11.75

LANGUAGES

Express One Series £74.00 + VAT = £86.95
French, German, Spanish
Global Language Series:
French, German, Spanish, Italian £38.00 + VAT = £44.65
Introductory Games Series:
French, German, Spanish, English £18.00 + VAT = £21.15
Triple Play Series:
French, Spanish, English £20.00 + VAT = £23.50
Learn to Speak French Ver 4.0 £89.00 + VAT = £104.58
Learn to Speak Spanish Ver 5.0 £89.00 + VAT = £104.58
Berlitz Think & Talk Series:
French, Spanish, German, Italian £89.00 + VAT = £104.58
Pronunciation Tutor Series:
German, Spanish, Italian £38.00 + VAT = £44.65
Goldilocks and the Three Bears in French £19.00 + VAT = £22.33
Triple Play Plus Series £51.00 + VAT = £59.93

ENCYCLOPEDIAS

Encyclopedia Britannica £591.49 + VAT = £695.00
Encarta 1995 £50.00 + VAT = £58.75
Grolier 1995 £20.00 + VAT = £23.50
Comptons 1995 £20.00 + VAT = £23.50
Hutchinson's 1995 £35.00 + VAT = £41.13
Infopedia £25.00 + VAT = £29.38
Guinness Encyclopedia £25.00 + VAT = £29.38

NATURE

Animals Encyclopedia £26.00 + VAT = £30.55
Animals of San Diego Zoo £12.00 + VAT = £14.10
Behind the Scenes: The Zoo £30.00 + VAT = £35.25
Creepy Crawlies £18.00 + VAT = £21.15
Mammals Encyclopedia £18.00 + VAT = £21.15
Oceans Below £12.00 + VAT = £14.10
New Dictionary of the Living World £34.00 + VAT = £39.95

GEOGRAPHY

Biosphere £45.00 + VAT = £52.88
Global Explorer £51.00 + VAT = £59.93
Great Cities I & II £18.00 + VAT = £21.15
Guide to Egypt £25.00 + VAT = £29.38
Everywhere USA Guide £35.00 + VAT = £41.13
Bella Italia: Florence £15.00 + VAT = £17.63
One Tribe £40.00 + VAT = £47.00
One World Atlas £30.00 + VAT = £35.25
World Atlas V5 £12.00 + VAT = £14.10

HISTORY

Anglo-Saxons £35.00 + VAT = £41.13
Haldeman Diaries £30.00 + VAT = £35.25
ITN World News 92/93 £30.00 + VAT = £35.25
1995 World Fact Book £15.00 + VAT = £17.63
Total History 3 CDs £54.00 + VAT = £63.45
Vietnam £36.00 + VAT = £42.30
Warfare £32.00 + VAT = £37.60

LITERATURE

Bibliotech £15.00 + VAT = £17.63
Chamber's Dictionary £44.00 + VAT = £51.70
Classic Library £25.00 + VAT = £29.38
Great Literature Plus £25.00 + VAT = £29.38
Monarch Notes for Windows £25.00 + VAT = £29.38
Living Poetry £15.00 + VAT = £17.63
Great Poetry Classics £21.00 + VAT = £24.68
Complete Works: Shakespeare £25.00 + VAT = £29.38
Romeo and Juliet £35.00 + VAT = £41.13

RELIGION

Bible Library £21.00 + VAT = £24.68
The Holy Bible £18.00 + VAT = £21.15
New Family Bible £32.00 + VAT = £37.60
Compton's Multimedia Bible £28.00 + VAT = £32.90
Multimedia Family Bible £18.00 + VAT = £21.15

SCIENCES

A Brief History of Time £34.00 + VAT = £39.95
Bodyworks Version 3 £23.00 + VAT = £27.03
Earthquake £23.00 + VAT = £27.03
Small Blue Planet £32.00 + VAT = £37.60
A View from the Earth £28.00 + VAT = £32.90
Interactive Periodic Table £35.00 + VAT = £41.13
Red Shift £32.00 + VAT = £37.60
Interactive Space Encyclopedia £25.00 + VAT = £29.38
Starlite £19.00 + VAT = £22.33

TOP 20 GAMES

7th Guest £14.00 + VAT = £16.45
Theme Park £29.00 + VAT = £34.08
Myst £29.00 + VAT = £34.08
Biotope £33.00 + VAT = £38.78
Discworld £32.00 + VAT = £37.60
Full Throttle £29.00 + VAT = £34.08
Little Big Adventure £29.00 + VAT = £34.08
Dark Forces £30.00 + VAT = £35.25
Nascar Racing £22.00 + VAT = £25.85
T.F.X. £18.00 + VAT = £21.15
Monty Python: Waste of Time £26.00 + VAT = £30.55
Sam and Max Hit the Road £21.00 + VAT = £24.68
£14.00 + VAT = £16.45
Doom II £28.00 + VAT = £32.90
Rebel Assault £22.00 + VAT = £25.85
Mad Dog McCree £14.00 + VAT = £16.45
Klik and Play £27.00 + VAT = £31.73
X-Com: Terror from Deep £29.00 + VAT = £34.08
Indy Car Racing £15.00 + VAT = £17.63
Alone in the Dark I £15.00 + VAT = £17.63

CHILDREN

Barney Bear Goes to School £15.00 + VAT = £17.63
Barney Bear Goes to Space £15.00 + VAT = £17.63
BUSY TOWN £29.00 + VAT = £34.08
EAKids Art Center £25.00 + VAT = £29.38
EAKids Peter Pan £27.00 + VAT = £31.73
EAKids Sesame Letters £26.00 + VAT = £30.55
EAKids Sesame Words £26.00 + VAT = £30.55
EAKids Sesame Numbers £26.00 + VAT = £30.55
Early Math (3-6yrs) £29.00 + VAT = £34.08
Forever Growing Garden £25.00 + VAT = £29.38
Fun School 5 Dreamland £18.00 + VAT = £21.15
Fun School 5 Space £18.00 + VAT = £21.15
Fun School 5 Time £18.00 + VAT = £21.15
How Things Work in Busy Town £29.00 + VAT = £34.08
Kid Phonics £28.00 + VAT = £32.90
Kid Works 2 £28.00 + VAT = £32.90
Lander Gold Collection 4 programs: Hooray for Henrietta, Count and Add, Spellbound, Henrietta's Book of Spells £36.00 + VAT = £42.30
Mario is Missing £18.00 + VAT = £21.15
Mario Teaches Words £18.00 + VAT = £21.15
Math Blaster: In Search of Spot (6-12 years) £26.00 + VAT = £30.55
Math Blaster: Secret of the Lost City £26.00 + VAT = £30.55
Monkeybars - 12 games for 4-7 years £15.00 + VAT = £17.63
Multimedia Nursery Rhymes £12.00 + VAT = £14.10
Putt Putt Joins The Parade £14.00 + VAT = £16.45
Spellbound £20.00 + VAT = £23.50
The Circus £25.00 + VAT = £29.38
Tuneland £20.00 + VAT = £23.50
Where/World Carmen Sandiego? £16.00 + VAT = £18.80
Wiggins in Storyland £25.00 + VAT = £29.38

FAMILY HEALTH & LIVING

Lifestyle 4 CD Rom Pack: Gardening, Healthy Cooking, Wines of the World, National Parks of America £25.00 + VAT = £29.38
Family Doctor £15.00 + VAT = £17.63
Mayo Clinic Health Book £15.00 + VAT = £17.63
Mayo Total Heart £25.00 + VAT = £29.38
Mayo Pharmacist Guide £35.00 + VAT = £41.13
Prescription Drugs Guide £21.00 + VAT = £24.68
Total Health: Mind & Body £30.00 + VAT = £35.25
A Multimedia Guide to Yoga £21.00 + VAT = £24.68

DORLING KINDERSLEY

Eyewitness Series:
History of the World £38.00 + VAT = £44.65
Encyclopedia of Nature £38.00 + VAT = £44.65
Encyclopedia of Science £38.00 + VAT = £44.65
World Reference Atlas £45.00 + VAT = £52.88
The Ultimate Human Body £38.00 + VAT = £44.65
Stowaway £26.00 + VAT = £30.55
My First Incredible Amazing Dictionary £26.00 + VAT = £30.55
P.B. Bear's Birthday Party £26.00 + VAT = £30.55

ART & MUSIC

Clipart Heaven 2 & Book £21.00 + VAT = £24.68
Corel Draw V3.0 £52.00 + VAT = £61.10
Corel Gallery Colour Clipart £30.00 + VAT = £35.25
Corel Gallery 2 £55.00 + VAT = £64.63
Dr. Clip Arts £14.00 + VAT = £16.45
Fantasia Fonts for You & Book £21.00 + VAT = £24.68
Gifts Galore £15.00 + VAT = £17.63
Colour Clipart Library £26.00 + VAT = £30.55
Colour Mag's Clipart £18.00 + VAT = £21.15
Publisher Platinum £12.00 + VAT = £14.10
Fonts Platinum £12.00 + VAT = £14.10
Mavis Beacon Teaches Typing V3 £15.00 + VAT = £17.63

ART & MUSIC

Bob Dylan Highway 61 £25.00 + VAT = £29.38
Multimedia Jazz £16.00 + VAT = £18.80
Composer Quest £21.00 + VAT = £24.68
Hard Day's Night £22.00 + VAT = £25.85
Great Artists (Attica) £35.00 + VAT = £41.13
Introduction to Classical Music £35.00 + VAT = £41.13
Le Louvre £30.00 + VAT = £35.25
M'di Music Shop £21.00 + VAT = £24.68
Mozart's Life & Times £16.00 + VAT = £18.80
Music Workshop £20.00 + VAT = £23.50
Vivaldi Four Seasons £16.00 + VAT = £18.80

SHAREWARE

CICA 3 Disc set (Windows) £15.00 + VAT = £17.63
Simtel 2 Disc set (DOS) £15.00 + VAT = £17.63
Linux (Informagic 3 disc set) £25.00 + VAT = £29.38
LINUX Book £12.00 - zero VAT
5 Star Educational games £15.00 + VAT = £17.63
Shareware Heaven 3 £12.00 + VAT = £14.10
Night Owl V.16 £19.00 + VAT = £22.33
Cards and Puzzles £15.00 + VAT = £17.63

CHESTNUT

Animals of the World £12.00 + VAT = £14.10
Bibles & Religions £9.00 + VAT = £10.55
Clipart (Goliath) Warehouse £9.00 + VAT = £10.55
Circle of Knowledge £15.00 + VAT = £17.63
Complete Bookshop £9.00 + VAT = £10.55
Midi Master Collection £12.00 + VAT = £14.10
Shareware Overload Trio £15.00 + VAT = £17.63
TechnoTools £9.00 + VAT = £10.55
Too Many Typelonts! £9.00 + VAT = £10.55
Windowware £9.00 + VAT = £10.55

WALNUT CREEK

CICA 2 disc Windows £12.00 + VAT = £14.10
Clipart Cornucopia £16.00 + VAT = £18.80
GIGA Games £17.00 + VAT = £19.95
Libris Britannia III £17.00 + VAT = £19.95
Linux/GNU/X £25.00 + VAT = £29.38
Project Gutenberg £15.00 + VAT = £17.63
QR2! Ham Radio £15.00 + VAT = £17.63
S.mtel 20 £15.00 + VAT = £17.63
Source Code £21.00 + VAT = £24.68
Space and Astronomy £16.00 + VAT = £18.80
Toolkit for Linux £21.00 + VAT = £24.68
Internet Info £21.00 + VAT = £24.68

COME AND VISIT OUR SHOP

Carriage & Packing £2.50 + VAT = £2.94

WE AIM TO GIVE YOU THE BEST SERVICE AND ADVICE

PHONE 01844 - 342411 FAX 01844 - 342381

RIDGEWAY CD ROM LTD, 24 BELL ST, PRINCES RISBOROUGH HP27 0AD

We are happy to accept School and Local Authority orders. We have many Schools, Universities and Blue Chip Companies as our valued customers

EXPORT ORDERS WELCOME

Prices subject to change without notice. E&OE.



Quantum PC Multimedia Video Solutions

Q-Video (DTV)



Access live *TELETEXT* data automatically and Watch live television within a Window.

- Teletext Monitor - *e.g. notify Share Price change!*
- OLE Server - *e.g. Automatic spreadsheet update!*
- True Colour - *regardless of Windows mode!*
- Windows - *fully multitasking and scalable!*

True Multimedia
Video for only :-

£299

Q-Video (RT)



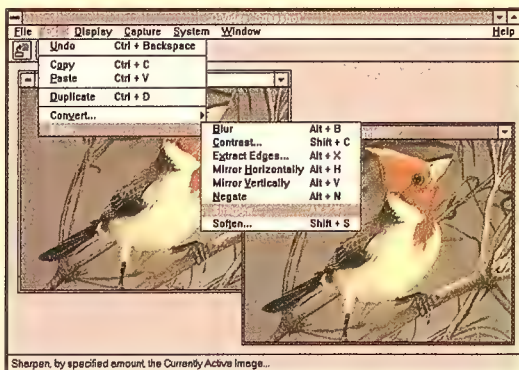
Connect to Camera, VCR or MPEG card and watch moving Video in a scalable Window.

- Multiple Input - *Composite, S-Video and Audio!*
- High Quality - *to broadcast standards!*
- Overlay Text - *Real Time Chroma Key!*
- Freeze Frame - *Capture and Save!*

Real Time Video
Display for only :-

£199

Q-Video 'Snapshot'



Snap an image from Video Camera, TV or Video Recorder, direct to Windows.

- Real-Time Capture - *video pause NOT required!*
- High Resolution - *to broadcast standards!*
- True Colour - *16.7 million colours!*
- Windows - *All screen modes!*

Video Frame
Grabber :-

£99

N.B. Prices exclude VAT and Carriage. All Products made in UK. Trade enquiries Welcome.

Quantum

2b Young Square, Brucefield, Livingston EH54 9BX

Tel: **01506-461917**



Claim your

Subscribe to *PC Answers* by direct debit and get two **free** issues **plus** your choice of either *Sim City 2000*, *The Hutchinson Multimedia Encyclopedia* or *WordStar for Windows 2*. Great value!

Get **EIGHT FREE ISSUES** with a 24 issue subscription to *PC Answers*!

Subscribe to *PC Answers* for 24 issues to get:

- 24 issues for the price of 16
- That means you only pay £3.33 an issue (CD version) or £2.66 an issue (HD version)
- You guarantee your copy of *PC Answers* for the next 24 months
- Alternatively you can subscribe for 12 issues and get two free. But wait a minute, subscribing by Direct Debit gives you two free issues and a free game - I know which one I'd go for!



Post this order form today! A photocopy is fine if you don't want to cut out this form.

- ☐ I would like a subscription to *PC Answers* with the offer ticked below
- ☐ Please extend my current subscription to *PC Answers* with the offer ticked below.

Name _____

Address _____

Post Code _____

Daytime tel no _____

With which issue would you like your subscription to start? _____

- ☐ I would like to subscribe and get up to eight **FREE** issues

24 issues (for price of 18) 12 issues (for price of 10)

UK

CD	HD	CD	HD
<input type="checkbox"/> £79.84	<input type="checkbox"/> £63.85	<input type="checkbox"/> £49.99	<input type="checkbox"/> £39.99

Europe

CD	HD	CD	HD
<input type="checkbox"/> £103.84	<input type="checkbox"/> £87.85	<input type="checkbox"/> £61.99	<input type="checkbox"/> £51.99

Rest of the world

CD	HD	CD	HD
<input type="checkbox"/> £139.84	<input type="checkbox"/> £93.85	<input type="checkbox"/> £79.99	<input type="checkbox"/> £69.99

- ☐ **12 Issues for the price of 10 & free gift** (UK Direct Debit - this offer is only open to readers with a UK based bank account)

☐ **CD EDITION** £49.99 ☐ **HD EDITION** £39.99

My choice of free gift is: ☐ *Sim City 2000*
☐ *Hutchinson Encyclopedia* ☐ *Wordstar*

Choose your method of payment.

- ☐ 1. I would like to pay by **Direct Debit**. (Please fill out the mandate below)
- ☐ 2. I would like to pay by **Cheque** (payable to Future Publishing)
- ☐ 3. I would like to pay by ☐ **Visa** ☐ **Access**

Card no _____

Expiry date _____

Signature _____

Date _____

UK readers return this card by Freepost to: *PC Answers* Subscriptions, Future Publishing Ltd, Freepost B54900, Somerton, Somerset TA11 7BR

Overseas readers return this form (postage payable) to: *PC Answers* Subscriptions, Future Publishing Ltd, Cary Court, Somerton, Somerset, UK TA11 6TB

PCAP509 ☐ Please tick this box if you would prefer not to receive information on other offers.

Instruction to your Bank or Building Society to pay Direct Debits.

Future PUBLISHING **DIRECT Debit** Originator's Identification Number **930763**
 Please send this form to address above

1. Name and full postal address of your Bank or Building Society branch

To: The Manager _____ Bank/Building Society

Address _____ Postcode _____

2. Name(s) of account holder(s) _____

3. Branch sort code (from the top right hand corner of your cheque)

4. Bank or Building Society account number

5. Instruction to your Bank or Building Society

Please pay Future Publishing Direct Debits from the account detailed on this Instruction subject to the safeguards assured by the Direct Debit Guarantee

Signature(s) _____ Date _____

The Direct Debit Guarantee

• This Guarantee is offered by all Banks and Building Societies that take part in the Direct Debit Scheme. The efficiency and security of the Scheme is monitored and protected by your own Bank or Building Society.

• We will debit your account with the full amount as soon as your instruction has been processed. Thereafter we will debit your account on the anniversary of your subscription

• If the amounts to be paid or the payment dates change, you will be told of this in advance by at least 14 days as agreed.

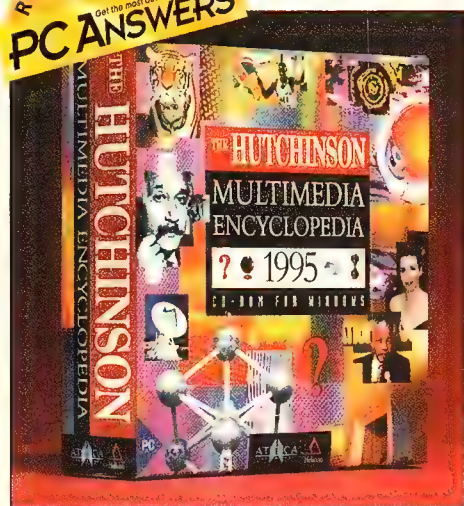
• If an error is made by us or your Bank/Building Society, you are guaranteed a full and immediate refund from your branch of the amount paid.

• You can cancel a Direct Debit at any time, by writing to your Bank or Building Society. Please also send a copy of your letter to us.

Banks and Building Society may not accept Direct Debit Instructions for some types of account.

free gift!

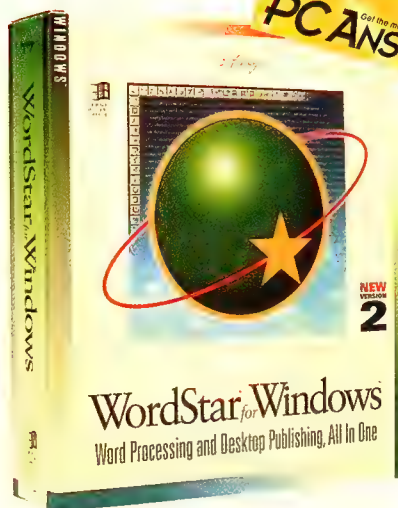
RECOMMENDED
Get the most out of your PC at home
PC ANSWERS



HUTCHINSON MULTIMEDIA ENCYCLOPEDIA

● The huge practical absolutely essential reference book covering over 40,000 different topics, illustrated with sound, video, photographs and words. You can't afford to be without it!

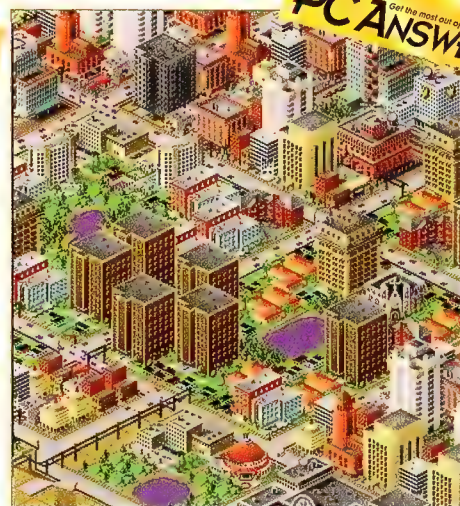
RECOMMENDED
Get the most out of your PC at home
PC ANSWERS



WORDSTAR FOR WINDOWS 2

● Word processing and DTP can be yours with this program featuring WYSIWYG text editing, automatic table generation, drag and drop editing, macros, text and graphics linking, rotating pictures – and much much more!

RECOMMENDED
Get the most out of your PC at home
PC ANSWERS



SIM CITY 2000

● Take control of a city and build your very own idea of heaven in this engrossing 3D god game. Our reviewer said: 'There's something about being in total control and keeps you coming back for more... mind-shatteringly addictive'

Subscribing by Direct Debit is the easy way to pay, saving you time and money, but it also saves us administration costs – this is why we can offer you your free gift when you subscribe to *PC Answers* and give you two issues free – just fill in the form opposite

So what's next..?

- 1 UK residents send this form by Freepost to *PC Answers* Subscriptions, Future Publishing Ltd, FREEPOST BS4 900, Somerton TA11 7BR.
- 2 Overseas readers return this form to *PC Answers* Subscriptions, Future Publishing Ltd, Cary Court, Somerton TA11 6TB UK.
- 3 Tired of filling in forms? Then telephone us now on 01225 822511 and we'll get your subscription processed today.

YOUR MONEY BACK GUARANTEE

And don't forget, if at any time you wish to cancel your subscription you will receive a full refund for all un-mailed copies. You have nothing to lose!

**Pay the lowest possible price
– make the best savings
– and there's no risk!**

SUBSCRIPTION HOTLINE: 01225 822511

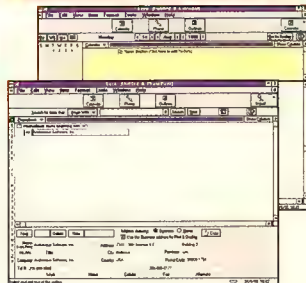
Special offers

Ecco – Simplicity & Professional



Check this out on last month's PC Answers CD-ROM

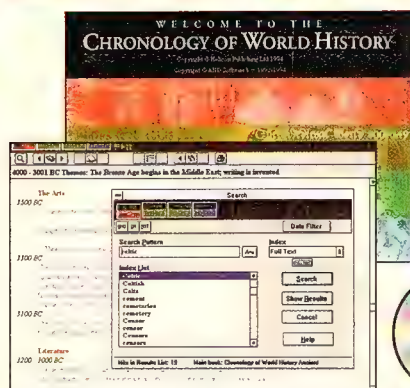
The ideal personal information manager to help you organise your life both at home and at work. Includes a telephone book, calendar, filters, sorting and forms, columns, folders plus loads of global features. There's also a real-time activity manager, group scheduling, project management and the ability to customise, collate and collaborate so you can select just the information you need, display it as you like, and then distribute it. Get it at the PC Answers exclusive price!



ECCO SIMPLICITY
ORDER CODE: PCAECCS
RRP: £81.07
SPECIAL PRICE: £54.95

ECCO PROFESSIONAL
ORDER CODE: PCAECCP
RRP: £233.83
SPECIAL PRICE: £145.95

Chronology of World History



This CD-ROM presents the events of history in context from the earliest times recorded up to the 1990s. By a long way, this is the most comprehensive and authoritative record of the history of the world to appear on CD-ROM. Check out last month's issue for a full review.



Check this out on last month's PC Answers CD-ROM

CHRONOLOGY OF WORLD HISTORY CD-ROM
ORDER CODE: PCAWCC
PRICE: £125

Back issues



ISSUE 1 (HD only) ♦ Gates' vision ♦ Central Point S1 on Disk ♦ Multimedia PCs



ISSUE 2 (HD only) ♦ PCs of the year 2000 ♦ Integrated Windows software



ISSUE 3 (HD only) ♦ Sound & vision ♦ Memory upgrade ♦ Drag 'n' File on Disk



Issue 4 (HD only)
♦ CD-ROM drives ♦ Total upgrade solutions
♦ Windows Toolkit on Disk
♦ Communications packages for Windows



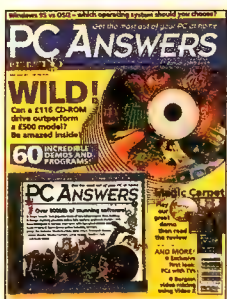
Issue 5 (HD only) ♦ OS/2 for Windows ♦ Video digitisers ♦ Speech recognition – what's new?



Issue 6 (HD only)
♦ Pentiums vs top-of-the-range 486s ♦ Power Macs ♦ Real Magic MPEG card



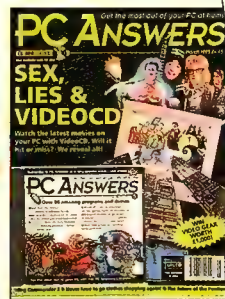
ISSUE 10 (HD only)
♦ Animation ♦ Virtual reality ♦ Speakers and microphones roundup: we help you choose



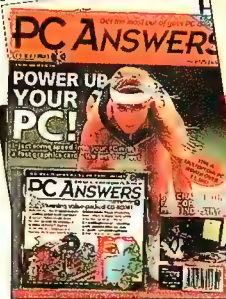
ISSUE 11 (CD and HD)
♦ Should you buy a quad speed CD-ROM drive? ♦ PC/TVs – first look ♦ Designer on CD-ROM



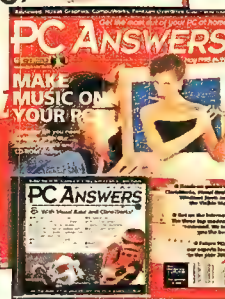
ISSUE 12 (HD only)
♦ Get on the Internet! ♦ Rendering programs roundup ♦ Choose a cheap laser printer for your home



ISSUE 13 (CD and HD)
♦ VideoCDs for your PC – will they succeed? ♦ Desktop publishing made completely simple ♦ Future of the Pentium



ISSUE 14 (CD and HD)
♦ Choose a video accelerator card ♦ PCs and the film industry ♦ Colour inkjet printers on test ♦ Beginners' supplement



ISSUE 15 (CD and HD)
♦ Making music on your PC ♦ Visual Basic on HD, Visual Basic for Windows and ClarisWorks 3 on CD-ROM ♦ A to Z tips supplement

PRIORITY ORDER HOTLINE:

3D Construction Kit User Manual

We've featured the software on this month's cover CD. To get the most out of the software, why not buy the official 72-page user manual for only £8.95. It covers everything from the basics of creating and editing your first object through to use of variables and sound effects.



Check out the 3D Construction Kit User Manual on this month's PC Answers CD-ROM.



ORDER NUMBER: PCF3DM
PRICE £8.95

WordStar 2.0 for Windows

Special upgrade offer – £19.95!

WORDSTAR SPECIAL EDITION OFFER

There's a limited working version of WordStar 2.0 for Windows on this month's CoverCD. You can upgrade to the full working version of WordStar with this Special Edition bundle that we've put together in conjunction with SoftKey. Included is the complete WordStar software on CD-ROM and a copy of Future's "All You need to know about WordStar 2.0 for Windows" book that normally retails for £12.95.

Check this out on this month's PC Answers CD-ROM.



WORDSTAR SPECIAL EDITION (CD-ROM PLUS BOOK)

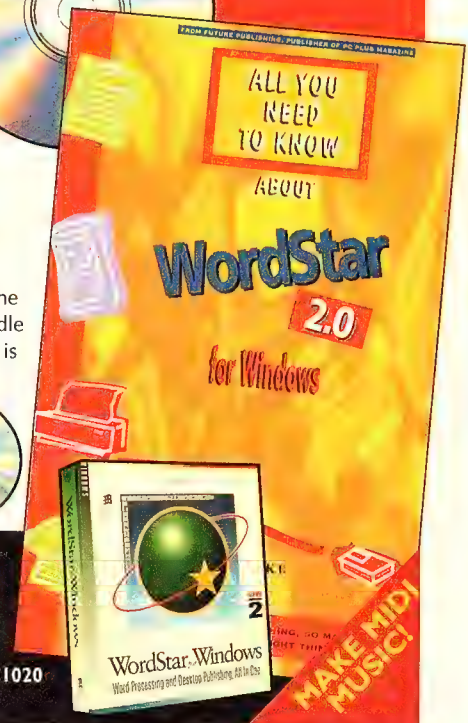
ORDER NUMBER: PC3WSC

PRICE: £19.95

Or alternatively, you can buy the full boxed product for only £32.90 which includes SoftKey's own user manual.

WORDSTAR FULL BOXED EDITION ORDER NUMBER: PC1020

PRICE: £32.80



ISSUE 7 (HD only) ♦ 24-bit image retouching ♦ Understand CONFIG.SYS ♦ On disk: Reunion Lite



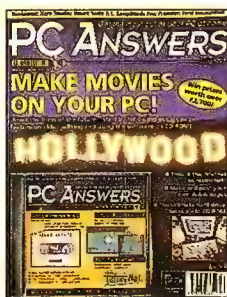
ISSUE 8 (HD only) ♦ Make your own multimedia ♦ WordExpress on disk ♦ Scanner roundup ♦ What's copyright and what can you have?



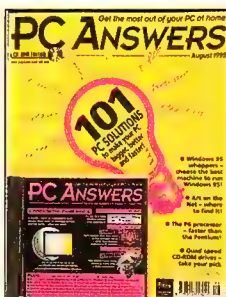
ISSUE 9 (HD only) ♦ Truth about viruses ♦ Upgrade your 386 to a mighty 486 ♦ 3D graphics – how to make them yourself ♦ Illuminatus on CD-ROM



ISSUE 16 (CD and HD) ♦ Plug and play – easy upgrades ♦ Digital cameras ♦ 3DFIX on CD-ROM, Paintshop Pro 3 on HD ♦ Windows 95 supplement



ISSUE 17 (CD and HD) ♦ Video editing ♦ Adobe Premiere tryout version on CD-ROM ♦ Controlling the Internet ♦ Back up your hard drive onto CD-ROM



ISSUE 18 (CD and HD) ♦ 101 PC Solutions ♦ CompuServe membership pack on CD-ROM ♦ Quad speed CD-ROM roundup ♦ Digital art on the Net

PC Answers priority order form

Please send me the following back issues of PC Answers for just £3.99 (HD) and £4.99 (CD-ROM) each, including postage and package:

Issue number	HD/CD-ROM	Quantity

Please send me the following special offers

Order number	Quantity	Price

Total: £

Method of payment: ☐ Access ☐ Visa ☐ Cheque ☐ PO

Credit card no:

Expiry date:

Title Initials Surname

Address

Postcode Telephone

Signature Date

Please return this form (or a photocopy) to the following address

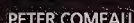
PC Answers, Future Publishing Ltd,
Freepost (BS4900), Somerton, Somerset TA11 6BR
(no stamp is required if posted in the UK) PCA/MO/509
(If you do not wish to receive offers from other companies, tick here ☐)

01225 822511

Tearing your hair out? Insomnia? Let our experts make your life easier



Steve has tracked the development of Windows since version 2.0, and has been writing about it for five years. He really does know all of its more obscure nooks and crannies inside out.



Hardware holds no mysteries for Peter, who's also a bit of an electronics genius. Test his extensive knowledge.



Will knows DOS like the back of his hand, having advised on its use since the day it started shipping with the original IBM XT. He enjoys using one of the most complex DOS setups ever seen.



An unbeatable freelance programmer, Dave is the author of many books for DOS and Windows programmers.

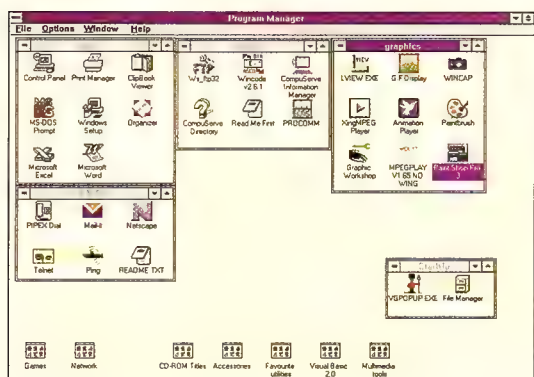
A color calibration chart featuring four distinct color patches arranged in a 2x2 grid. The patches are magenta (top-left), cyan (top-right), green (bottom-left), and blue (bottom-right). The chart is set against a dark background.

Windows

Uncluttered

Q After installing and trying programs in the six months I've owned my PC, *Program Manager* is now so chock-a-block with groups I have trouble finding things – and it makes my PC look untidy. What should I do?

Paul Holborn,
Sheffield



◆ Customising can make Windows easier to use – start by making *Program Manager* reflect the way you work

A Yes, every new program likes to add its own group, so ending up with dozens of groups each containing one icon isn't uncommon. The fact that Windows doesn't delete a group when you delete a program doesn't help either.

First, clear out any defunct program groups. Just select the minimised group, hit the [Del] key and agree that you want it gone. It's worth taking a moment or two to decide if you want to keep hold of all the remaining programs installed. PCs tend to suffer from attic syndrome, accumulating junk to fill up space.

You don't have to run a program from the group it originally created, so the next thing to do is consolidate those programs you do want into larger, more meaningful groups. Note, though, that Windows gets a little cranky if groups have more than about 40 icons in them.

To get down to specific suggestions, you probably have icons from which you run CD-ROM titles. Why not create a new program group called 'CD-ROM Titles' and drag all the CD-ROM icons into it? Then you

- ◆ Make a fast check on the number of programs you have running by hitting [Ctrl][esc] and bringing up *Task Manager*

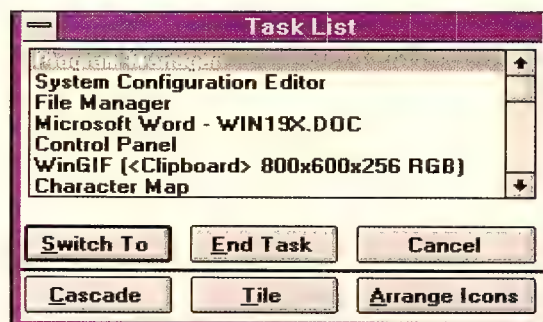
can delete the empty groups. By the time you've done the same thing with games, general utilities, graphics applications, sound programs, comms programs and so on, Program Manager will be far less cluttered, better organised and much easier to use.

Don't forget to include the original Windows groups and programs in this tidying process – they aren't sacrosanct.

Slow, slow, quick, quick, slow

Q Why does my PC seem to run more slowly in the afternoon than it does in the morning. I know that I tend to flag as the day lengthens, but surely PCs don't get tired?

Lyndsay Morris,
Swansea



A This is normally accompanied by ever more disk activity as Windows swaps memory out to disk more often. The usual reason for this is that Windows isn't recovering memory properly from one or more programs. Of course, it could be that as the day goes on you run more and more programs without closing down those already running, which would have the same effect.

Assuming it's the former, the most efficient fix is to quit Windows and start it again. Think of it not as an irritation but a coffee opportunity. Finding the culprit can be difficult. Try checking resources using the Help>About menu option in Program Manager before running a program and after quitting it. You need to run through them one at a time and, anyway, this technique isn't guaranteed to work. You may have to use the program before it does its dirty deed.



◆ Tidy up your font lists by enabling applications to ignore bitmapped system fonts

Too many fonts

Q Is there any way to make only the fonts I use most often appear in application font lists without having to scroll through all the others? I don't want to delete them because I need them occasionally.

Thomas Simpson,
Edinburgh

A Chances are you don't use bitmapped fonts, so begin by ticking the – take a deep breath – Show Only TrueType Fonts in Application box, which is available from the Fonts control in Control Panel.

A number of applications – such as Word – displays the most recently used fonts at the top of the font list, which is useful, but the only way to stop the rest from showing normally is to remove them using the Font Control. You can leave them on the hard drive which speeds up the installation process, but you can't have them installed but not displayed. Sorry!

Old Bak

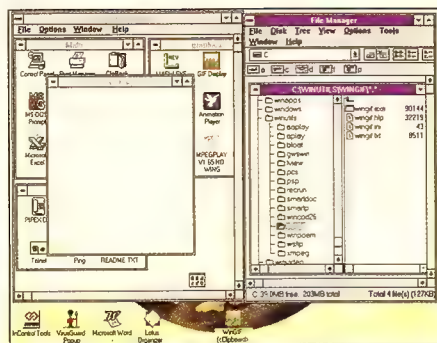
Q I have just moved the directory of a Windows utility to a totally new location – as part of my campaign for a better organised hard drive as suggested by *PC Answers*. Since this change, however, it seems I can't run it from the Program Manager icon. Why is this and what can I do about it?

Oliver Richardson,
Knightsbridge

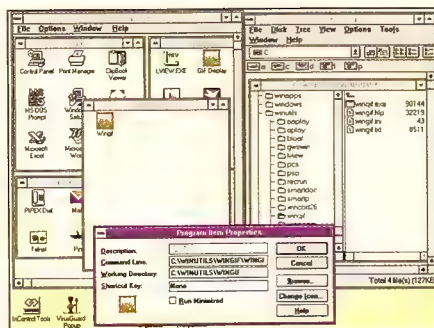


A Well, we suggest-ed you install programs into appropriate sub-directories. For example, you could install Windows utilities into a \winutils sub-directory.

As you've discovered, if you just move an existing directory, it usually stops the program working. You may even be unable to run it from File Manager. This can happen because an .INI file might be instructing it to look for



◆ To create a new Program Manager icon using drag and drop, position File Manager and Program Manager Windows side by side



◆ Select the .exe file and drag it to the group while holding down the left mouse button, then let go. Windows does the rest for you

“With existing Windows programs you have to delete and re-install them to move them”

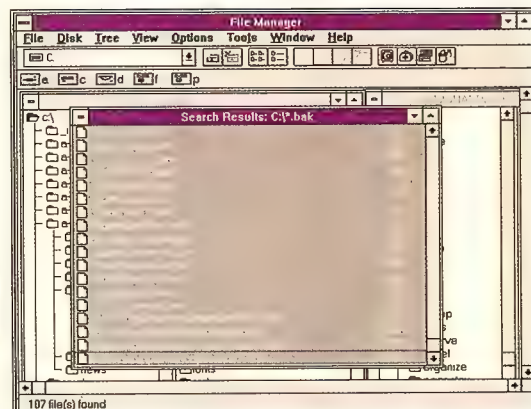
essential files in somewhere that no longer exists.

Generally, with existing Windows programs, you have to delete and re-install them to move them. Some simple utilities can be made to work again from Program Manager by either editing the Properties dialog from the the File menu, or by deleting the original icon and dragging the relevant .EXE file from the new directory into the Program Manager group.

Bob's your uncle

Q I've been reading about Microsoft's Bob, an easy to use interface for Windows, and wondering where I can get a copy. Any ideas?
Larry Collins,
Swindon

A Bob is best described as a 'cute' Windows shell – Program Manager replacement. Basically, it looks friendly, talks a lot and limits your actions to make program launching easier. Microsoft says it has no plans to launch it in Europe, which includes the UK. To get a flavour of it, though, check out the CD-ROM for Bubba, Bob's country cousin.



◆ It's not Bob... but it's not far off. Is this really an easier interface for Windows?

Cycling applications

Not the two wheeled types, but Windows applications. When you have several going at once, the fastest way to get to another one is hold down the [Alt] key and press [Tab]. The small grey box in the centre of the screen shows a different application each time you press [Tab], until you return to the one you were using in the first place. If you miss the one you want you can cycle backwards by holding down [Shift] and [Alt] and pressing [Tab].

Less well known is how to cancel the whole process and return to the application from which you started. To do this, keep pressing [Alt] and hit [Esc], then take your fingers off the keys. This trick can save a lot of hassle.



◆ Use [Alt][Esc] to get back to where you started when using the cool switch [Alt][Tab] to move between applications

Hardware

Answered by Peter Comeau

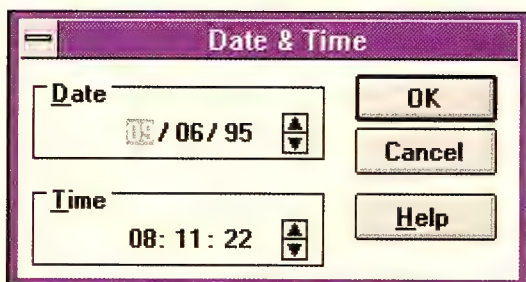
Battery provision

Just recently, when I've switched on my PC it has flashed up the occasional 'CMOS Memory Failure' error

message and told me to 'Press F1 to Resume'. Then I have to re-enter all the details of my hard drive settings and so on before I can use it. (I've also noticed that my the PC's clock is running slow.) What is the 'CMOS Memory' and how can I replace it?

Lee Parkin,
Leeds

A It's not the CMOS memory you have to replace, but the battery powering it.



♦ If your PC clock starts behaving erratically, there's probably something wrong with the PC CMOS battery

While your PC is switched off, a battery maintains power to a small amount of CMOS memory which contains the settings that enable the PC to boot up. It also powers your PC's clock.

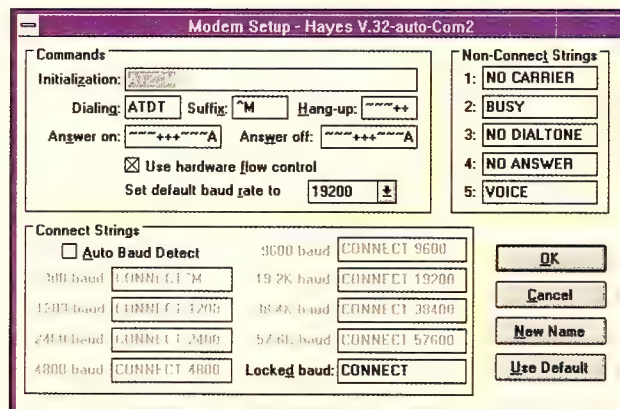
As well as the hard drive and floppy disk data, the CMOS memory often contains advanced settings used to fine tune your PC. It's worth noting these as well.

The first symptom of battery failure is typically an erratic PC clock, followed by the error messages which you've described. If you can, always take your PC to your dealer for battery replacement.

Otherwise, open up the PC and look where the keyboard cable connector is. You either see a pair of black and red wires leading to a small battery box fixed to the case, or a rechargeable battery fixed to the motherboard.

Older PCs used alkaline batteries which should be replaced annually, but now Lithium batteries are common. These run for two to three years but eventually need replacing with one of identical voltage. You can buy them from any good specialist PC dealer.

If you have a rechargeable battery, this can just run down if you don't use your PC for a



♦ If you're having trouble with your modem after using fax software, edit the comms software initialisation string to fix it

couple of months. Leaving the PC on for about 36 hours should recharge it.

If there is a white chemical 'fur' on the ends of the rechargeable battery, it has failed. Don't try to fiddle with it yourself, take it to your dealer and let them replace it.

Moody modems

I've been using my Zoom modem to send faxes and log on to bulletin boards and the Internet, but I often have to restart the PC when I switch between the fax software and the



DOS

Answered by Wilf Hey

Heavy date

Are there system variables I can use in .BAT files – for reports, and for decisions based on day of week – to tell me the day of week, date and time? Though the DATE and TIME commands give me the information, it isn't in a form I can use within .BAT files.

Freddie Mansfield, Croydon

A There are no such variables – you need to make three files as follows:

1 One called CRLF – 'carriage return/line feed' – which you should keep in a convenient place, such as the root directory of your hard drive. You create it like this:

1. Enter **EDIT C:\CRLF**
2. Press [Enter] once
3. Key [Alt]-F, then follow with X and then Y

2 A second called GETTIME.BAT, anywhere in a directory that's in your path; create it using EDIT, containing the following lines:

```
@ECHO OFF
DATE <C:\CRLF>C:\GOTDATE.BAT
TIME <C:\CRLF>C:\GOTTIME.BAT
CALL C:\GOTDATE
CALL C:\GOTTIME
```

3 Lastly, a third file called CURRENT.BAT, anywhere in a directory which is in your path; you can create it using EDIT, containing the following lines:

```
IF %1==time GOTO GETTIME
SET DAY=%3
SET DATE=%4
GOTO ENDBAT
:GETTIME
SET TIME=%3
:ENDBAT
```

Now you're all set. Whenever you enter **GETTIME** you create – or update – three useful environment variables that you can use within .BAT files: **DATE**, **DAY** and **TIME**. Each of these can be surrounded with percent signs in a .BAT file in order to pick out the value. For example, if you wanted to do a full virus scan at startup each Monday morning, you could insert the following code in your AUTOEXEC.BAT:

```
CALL GETTIME
IF NOT %DAY%==Mon GOTO NORMAL
FINDVIRUS C:
:NORMAL
```

Tom, Dick and Harry

I have a very simple arrangement for my family PC: all family members can use the machine, but they have to 'log on' using a .BAT file; this does a SET with their name.

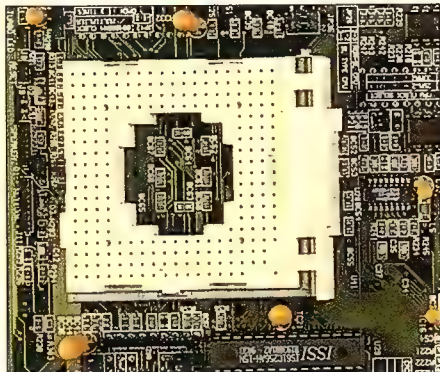
It works well; I can include specific instructions within other .BAT files, so that only

others, otherwise the modem won't dial out. Is the software faulty?

Roger Taylor,
Glasgow

A It's not the software that's at fault, but the way it sets up your modem. Your modem is Hayes compatible, which basically means it can be controlled using the AT command set invented by Hayes and now adopted as an industry standard. For instance, if you type **ATZ** in your comms software terminal screen, the modem will be reset.

When you start your fax or bulletin board software, a string of AT commands – known as the 'initialisation string' – is sent to set the



◆ You can add a Pentium Overdrive chip to a 486 provided you have the right socket

modem up as a fax transceiver. The modem stores these commands in its memory until you switch off or reset the computer.

To reset the modem to its default settings, and so ignore any conflicts set by your software, use the command **AT&F**. Of course, if you type this after starting your communications software, the modem also loses any initial settings made by that software. Therefore, you need to remember to enter this in your software's initialisation string.

Look under one of the menu items – such as Setup or Settings – and find the modem settings. There should be a box marked 'Initialisation string'. If it doesn't have **&F** as the first entry after **AT**, then type it in – there's no need for spaces. If there is no initialisation string entered then put in **AT&F&C1&D2**, the basic settings string expected by most PC communications programs.

Lagging behind

Q I bought my present computer, a 486DX/33, about four years ago when it was the fastest processor going. Now it appears rather slow compared to the very latest machines. Can I plug a Pentium processor into my motherboard?

Cliff Knight,
Cardiff

A No, you can't. Pentium processors require a larger processor socket, a 3.3 volts

instead of the 5 volts supply your motherboard uses, and special support chipsets.

Some motherboards were made with larger processor sockets that can take a Pentium Overdrive chip, the P54T, which provides an upgrade path, but yours is too old to have this.

The top processor that you could possibly upgrade to is a DX4/100, but this also needs a 3.3 volts supply. Your dealer may be able to fit an adaptor socket which contains a voltage regulator to reduce the voltage. Otherwise a 486DX2/66 is good value for money at under £150, and provides a noticeable speed improvement over the DX33.

But before you do any of this, have you considered installing more memory? If you

only have 2Mb or 4Mb, upgrading to 8Mb or 16Mb substantially improves Windows operation. Similarly, replacing your graphics card with a new Windows accelerator card is worthwhile.

If you must have a Pentium, ask a dealer about motherboard replacements. But you may have to buy a new graphics card and memory, as Pentium motherboards use the PCI bus and 72-pin SIMMs. It's an expensive option.

“If you've 4Mb, upgrading to 8Mb or 16Mb greatly improves Windows performance”

my wife and I are allowed to run ACCOUNTS.BAT, for example. What I want, though, is a more general method way of restricting access to certain programs and of adding users.

Theo Charles, London

A You can make PKZIP do much of the work for you. Let's say you want to add Shep as a valid user for your system; you do this by having a special archive file, devoted to names; you might even call it C:\NAMES.ZIP. To add Shep, you enter the following lines:

```
ECHO X >C:\SHEP.NAM
PKZIP C:\NAMES C:\SHEP.NAM
DEL C:\SHEP.NAM
```

In the log-in .BAT file you can easily test whether the parameter is located within the NAMES.ZIP file like so:

```
PKZIP -V C:\NAMES %1.NAM >NUL
IF ERRORLEVEL 13 GOTO BADNAME
```

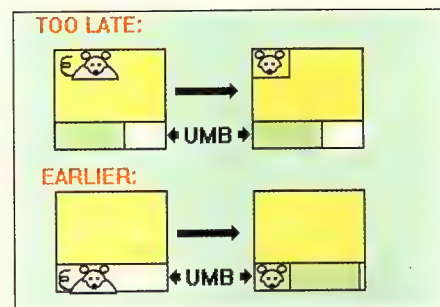
In order to remove a name – SHEP, for example – you have to enter:

```
PKZIP -D SHEP.NAM
```

You can extend this idea to use different .ZIP files for different applications: for example, in your case the ACCOUNT.ZIP would only have two names within it!

Hickory Dickory Doc

Q I can't get my mouse driver to load into high memory using **LOADHIGH** – it



◆ Depending on what time you try to load the mouse driver, you may not find enough space for the full version in UMBs

always occupies conventional memory. The confusing thing is that it occupies only 15K, but there is still 17K remaining in my UMBs – Upper Memory Blocks. Can you tell me why it won't **LOADHIGH**?

Donald Felt, Cardiff

A The problem here is that the mouse driver is really more like 40K than 15K, though this does vary from mouse to mouse. This is because of the extra, rarely used mouse functions – testing, reassignment and recalibration, for example. The moment the driver recognises that you don't need these functions, it automatically prunes itself.

In your case, there's no room in the UMB for the full driver at the time you want to load it, so it's all loaded into conventional memory.

The most common solution is to put the **LOADHIGH** command earlier in your **AUTOEXEC.BAT** when there should still be room.

Once loaded and executed, it will give up unneeded space so you should be able to load other drivers and TSRs – Terminate/Stay Ready modules – in the UMB area.

Listing the executables

Is there any easy way to get a single alphabetical listing of all the executable files – .BAT, .COM and .EXE – within the current directory?

Bob Carless, Welshpool

A Sure. You might like to create a .BAT to do this, because it involves a few rather unusual keystrokes:

```
DIR *.BAT | FIND "BAT" >>LIST.LST
DIR *.COM | FIND "COM" >>LIST.LST
DIR *.EXE | FIND "EXE" >>LIST.LST
SORT <LIST.LST | MORE
```

This leaves a file, **LIST.LST**, on your drive, which you may wish to delete. Even if you don't it will be overwritten the next time you do the sequence of commands.

BLKLR	COM	97 08-07-94	12:58p
AUTO	BAT	1,368 11-04-95	2:06p
AUTOEXEC	BAT	1,007 04-05-95	9:16a
BLAH	COM	1 06-03-94	7:22a
BLINKOFF	COM	34 13-06-94	5:44a
BLINKON	COM	34 13-06-94	5:58a
BUG	COM	5,149 01-04-94	12:09a
CHGZERO	COM	34 13-06-94	5:52a
CHITLER	COM	22,456 15-08-94	5:36a
COMMAND	COM	54,645 01-05-94	6:22a
CURRENT	BAT	20 23-04-94	10:02a
DIC	COM	9,588 01-04-94	12:08a
DIRECTOR	BAT	225 07-04-95	6:09a
GOTIMV	BAT	62 09-06-95	7:46a
GOTTING	BAT	49 09-06-95	7:46a
HIDDEN	BAT	141 01-10-94	10:41a
ISSUE	COM	6,076 00-04-95	11:38a
WATCHING	BAT	57 06-06-94	12:52a
MYPATH	BAT	50 07-03-95	4:16p
N	COM	1,370 01-04-94	12:08a
MEMDIR	BAT	116 13-07-94	6:12a
MEMPATH	BAT	99 14-04-94	7:10p
OLDPATH	BAT	181 14-04-94	7:10p
ORSPATH	BAT	65 09-11-94	8:32a
---	More ---		

◆ It's easier than you think to create a **DIR**-type listing of all the executables in a directory

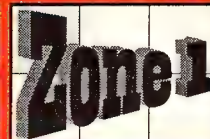
Dept. PF795
Zone 1 Ltd.
PO BOX 69,
Stone,
Staffordshire.
ST15 8GH.

FREE CATALOGUE

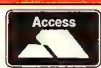
Over 2,000 titles.

Zone 1

'the software people'



The price you see is the price you pay, VAT, P&P are ALL included.



Great prices, same day despatch, free gifts, regular prize draws.

3.5" Disk

P0149	1942 PACIFIC AIR WAR	27.99
P0220	A-TRAIN & CONSTRUCTION SET	14.99
P0230	ACES OF THE DEEP	25.99
P0165	ALADDIN	19.99
P0166	ALONE IN THE DARK 2	25.99
P0277	BATTLE ISLE II	25.99
P0580	BATTLESLIDE	13.99
P0194	BENEATH A STEEL SKY	25.99
P0685	CANNON FODDER	22.99
P0150	CANNON FODDER 2	22.99
P0135	CHAMPIONSHIP MANAGER COLL.	17.99
P0162	CHASSINATOR TURBO	13.99
P0642	CIVILISATION FOR WINDOWS	25.99
P0292	COLONIZATION	27.99
P0520	DAWN PATROL	27.99
P0011	DAY OF THE TENTACLE	16.99
P0012	DEFENDER OF THE EMPIRE	13.99
P0201	DOOM 2	24.99
P0286	DUNE 2	11.49
P0579	EARTHSHOCK	25.99
P0193	ECSTASY	25.99
P0185	ELDER SCROLLS - THE ARENA	28.99
P0258	EMPIRE OF MEGAS	13.99
P0257	FIFA INTERNATIONAL SOCCER	25.99
P0782	FIRST ENCOUNTERS	25.99
P0163	FRONTIER ELITE 2	16.99
P0692	FULL THROTTLE	25.99
P0192	GABRIEL KNIGHT	25.99
P0158	HEIMDALL 2	13.99
P0010	IND. JONES & FATE OF ATLANTIS	16.99
P0273	INDYCAR RACING	19.99
P0594	JIMMY WHITE'S SNOOKER	11.49
P0056	KLIK AND PLAY	29.99
P0191	LEISURE SUIT LARRY 6	19.99
P0001	LEMMINGS	7.99
P0532	LEMMINGS 2	13.99
P0166	LION KING	19.99
P0162	LITTLE DIVIL	11.49
P0546	LURE OF THE TEMPTRESS	11.49
P0269	MAN UTD - PREMIER LEAGUE	13.99
P0293	MASTER OF MAGIC	27.99
P0403	MICRO MACHINES	19.99
P0521	MONKEY ISLAND	12.49
P0135	MONKEY ISLAND 2	12.49
P0506	MS FLIGHT SIM 5	25.99
P0272	NASCAR RACING	25.99
P0588	NHL HOCKEY	27.99
P0249	ON THE BALL - WORLD CUP ED	22.99
P0101	OUTPOST	27.99
P0134	OVERLORD	27.99
P0646	PACIFIC STRIKE	30.99
P0188	PAGAN: ULTIMA VII	32.99
P0262	PGA TOUR GOLF	16.99
P0582	PINBALL DREAMS 2	13.99
P0693	POLICE QUEST 4	22.99
P0625	POWER DRIVE	19.99
P0261	PREMIER MANAGER 3	22.99
P0200	QUARANTINE	25.99
P0426	RISE OF THE ROBOTS SVGA	28.99
P0694	RISE OF THE ROBOTS	19.99
P0008	SAM AND MAX HIT THE ROAD	16.99
P0121	SECRET WEAPONS OF LUFTWAFFE	12.49
P0620	SENSIBLE SOCCER (INT'L ED)	13.99
P0108	SETTLERS	27.99
P0222	SIM CITY & GRAPHIC SET	14.99
P0219	SIMCITY 2000	25.99
P0404	SPACE HULK	27.99
P0599	SPEEDBALL 2 BRUTAL DELUXE	27.99
P0570	SSN SEAWOLF	27.99
P0217	SUBWAR 2050	27.99
P0628	SYNDICATE PLUS	27.99
P0184	SYSTEM SHOCK	27.99
P0252	TACTICAL MANAGER	22.99
P0516	TECH. PARK	27.99
P0209	THEME PARK	27.99
P0009	TIE FIGHTER: DEF. OF THE EMPIRE	32.99
P0295	TRANSPORT TYCOON	27.99
P0644	UFO	27.99
P0212	ULTIMA 6 GOLF PLUS	11.49
P0186	ULTIMA 7	12.49
P0187	ULTIMA UNDERWORLD	11.49
P0583	UNNECESSARY ROUGHNESS	25.99
P0495	WING COMMANDER	11.49
P0259	WORLD CUP YEAR '94	22.99

Educational

P0560	ADI-ENGLISH (11-12 YEARS)	16.99
P0459	ADI-ENGLISH (12-13 YEARS)	16.99
P0463	ADI-FRENCH (11-12 YEARS)	16.99
P0464	ADI-FRENCH (13-14 YEARS)	16.99
P0466	ADI-GCSE MATHS	16.99
P0460	ADI-MATHS (12-13 YEARS)	16.99
P0465	ADI-MATHS (13-14 YEARS)	16.99
P0089	CHEMISTRY 1 (7-11 YEARS)	16.99
P0470	FATTY BEAR FUN PACK	19.99
P0455	FUN SCHOOL 4 (UNDER 5 YEARS)	16.99
P0456	FUN SCHOOL 4 (5-7 YEARS)	16.99
P0457	FUN SCHOOL 4 (7-11 YEARS)	16.99
P0373	KID PIX	10.49
P0474	MARIO TEACHES SUMS	16.99
P0475	MARIO'S PLAY SCHOOL	16.99
P0462	MERLINS MATHS	16.99
P0081	NODDYS BIG ADVENTURE	19.99
P0109	PLAY & LEARN	7.99
P0535	PUTT PUTT	2.99
P0112	READ WITH ME 2	25.99
P0110	WRITE WITH ME	25.99

CD-ROM

R0449	4TH GUEST & DUNE	22.99
R0181	ACES OF THE DEEP	27.99
R0117	ALL NEW WORLD OF LEMMINGS	25.99
R055	ALONE IN THE DARK 2	27.99
R0039	AWARD WINNERS GOLD	16.99
R0466	AWARD WINNERS PLATINUM	16.99
R0098	B-17 FLYING FORTRESS	12.49
R0156	BATTLE ISLE II	32.99
R0468	BLOODWINGS	34.99
R0290	CANNON FODDER/BEN.A STEEL SKY	22.99
R0276	CLASSIC COLLECTION (ACCESS)	16.99
R0277	CLASSIC COLLECTION (VELOCITY)	16.99
R0210	COLONIZATION	27.99
R0400	COMBAT CLASSICS 3	22.99
R0177	COVER GIRL STRIP POKER	32.99
R0161	CREATURE SHOCK	32.99
R0030	CYBERIA	30.99
R0237	D GENERATION	11.49
R0382	DARK FORCES	32.99
R0309	DAWN PATROL	27.99
R0013	DAY OF THE TENTACLE	25.99
R0183	DISC WORLD	32.99
R0165	DOOM 2	11.49
R0017	DRAGON LORE	27.99
R0010	DREAMWEB	27.99
R0045	DUNE 2 / LURE OF THE TEMPTRESS	11.49
R0342	EARTHSHOCK	27.99
R0154	ECSTASY	27.99
R0149	ELDER SCROLLS - THE ARENA	28.99
R0242	ELITE 2 FRONTIER	25.99
R0219	EMPIRE DELUXE MASTERS ED	25.99
R0249	EYE OF THE BEHOLDER	11.49
R0308	F-15 STRIKE EAGLE 3	12.49
R0219	F-19 STEALTH FIGHTER	12.49
R0303	F117A/F152	27.99
R0194	FIFA INTERNATIONAL SOCCER	25.99
R0256	GABRIEL KNIGHT	24.99
R0167	HI OCTANE	11.49
R0057	HITS FOR 6 VOL. 5	19.99
R0015	IND. JONES & FATE OF ATLANTIS	25.99
R0285	KINGS QUEST COLLECTION	27.99
R0156	KYRANIA 3	19.99
R0257	LEISURE SUIT LARRY 6	19.99
R0240	LITTLE DIVIL	22.99
R0211	LITTLE BIG ADVENTURE	32.99
R0207	MAGIC CARPET	32.99
R0211	MASTER OF MAGIC	27.99
R0023	MONTY PYTHON'S WASTE OF TIME	34.99
R0156	MS GOLF	27.99
R0239	MYST	34.99
R0198	NASCAR RACING	25.99
R0190	NHL HOCKEY 95	27.99
R0180	ON THE BALL - WORLD CUP ED	22.99
R0180	OUTPOST	32.99
R0251	ULTIMA 8 (SPEECH PACK)	34.99
R0191	PGA TOUR GOLF	32.99
R0144	PINBALL DREAMS DELUXE	32.99
R0024	POLICE QUEST 4	27.99
R0154	POWER DRIVE	19.99
R0184	PREMIER MANAGER 3	22.99
R0164	QUARANTINE	22.99
R0270	RISE OF THE ROBOTS	32.99
R0384	RISE OF THE TRIAD	27.49
R0124	SAM AND MAX HIT THE ROAD	25.14
R0182	STAR TREK TNG: A FINAL UNITY	34.99
R0352	SENSIBLE SOCCER (INT'L ED)	13.99
R0175	SIMCITY 2000	10.99
R0175	SIMON THE SORCEROR	10.99
R0469	SIMON THE SORCEROR 2	26.49
R0173	SUBWAR 2050	27.99
R0205	SYNDICATE - MISSION DISK	27.99
R0189	TACTICAL MANAGER	27.99
R0105	TECH. PARK	32.99
R0171	THEME PARK	27.99
R0213	TRANSPORT TYCOON	27.99
R0284	TRIPLE ACTION PACK VOL. 5	27.99
R0214	UFO	27.99
R0253	ULTIMA 8 WITH SPEECH PACK	34.99
R0128	UNIVERSE	25.99
R0150	VOYEUR	25.99
R0096	WING COMMANDER 3	39.99
R0153	WORLD CUP USA 94	20.99
R0122	ZOOL 2	14.99
R0373	ZORK ANTHOLOGY	11.49

Educational

R0059	3D BODY ADVENTURE	27.99
R0070	3D DINOSAUR ADVENTURE	27.99
R0079	BODYWORKS 3	38.99
R0123	COMPTON'S INTERACTIVE ENCYC.	39.99
R0124	MAPS AND FACTS	25.99
R0174	MS-CREATIVE WRITER	30.99
R0125	MS-ENCARTA 95	65.99
R0125	MS-ISARAC ASIMOV'S ULT. ROBOT	39.99
R0075	MS-MAGIC SCHOOL BUS HUMAN BODY	32.99
R0074	MS-MAGIC SCHOOL BUS SOLAR SYS.	32.99
R0082	READ WITH ME 1 & 2	10.99
R0296	TEDDY'S BIG DAY (2-5 YEARS)	19.99
R0295	TEDDY'S GREAT ADVENTURE	19.99
R0294	TEDDY'S HIDE AND SEEK	16.99
R0124	THE ULTIMATE HUMAN BODY	35.99
R0077	TUNELAND	27.99
R0067	UNDERSEA ADVENTURE	27.99
R0377	WALLOEBE JACK L. LIONAR	19.99
R0297	WALLOEBE JACK BINGI BUR STON	19.99
R0327	WORLD ATLAS 4	39.99

BUILD MUSCLES FAST!



NEW. Fast and effective way to build muscles and strength!

MUSCLE DYNAMICS is a 12-week body building programme based on the very latest scientific advances in strength training. Just 35 minutes daily in the privacy of your home will put you on the road to an amazing physique.

Noticeable results in 28 days guaranteed.

Send for FREE Information Pack.

MUSCLE DYNAMICS, P.O. BOX 70, DOUGLAS, IM99 1EH.

Tel: 01624 801023 (24 hrs)

MUSCLE DYNAMICS, P.O. BOX 70, DOUGLAS, IM99 1EH

Yes! I want to build muscles fast. Please rush me a FREE information pack!

Name.....BLOCK

Address.....CAPITALS

.....PLEASE

.....Postcode

PCA (A stamp for reply appreciated)

E-Kom High Speed Modems

Voice Data & Fax



High Speed Modems

Other

14.4i Data/Fax	£44.99	Quantum EIDE 540Mb	£118.99
14.4e Data/Fax	£59.99	Quantum EIDE 1.1Gb	£224.99
14.4i Voice/D/F	£59.99	NEC CDR272 (Quad)	£124.99
28.8i Data/Fax	£92.99		
28.8e Data/Fax	£114.99		

All prices ex VAT@ 17.5%. Free Delivery within M25. Otherwise £5 delivery charge

All E-Kom High Speed Modems are FCC approved. Cirrus Logic Chipset, Hayes Compat. Built in 16550 UART chip. Complete with Fax/Data software. Voice modems come with Supervoice 2.0 software, auto detects Voice/Data/Fax. Fax Back, Fax Forward and Fax on demand: 999 Mailboxes, Remote Access and Caller ID. All include UK connectors.

Fax - 0181 402 7151 0181 402 5061

All modems non BAPT approved

the **Phoenix** 75 from **Graham Jacobs** fitted with the



From
£449
(+VAT)



pentium

The Phoenix is an upgrade for existing AT clone computer systems. It is based on us re-manufacturing & fitting a new PCI/VLB/ISA motherboard complete with the new Intel Pentium 75Mhz processor. We have 30 pin to 72 pin adaptors so that in most instances we can use your present memory. We offer a full range of upgrades for most AT class computers and new LEO computer systems based on the Intel micro-processor family from only £195. Memory, Hard Disk and Controller upgrades, FAX/MODEM's (Approved) 14,400 from £99 and 28,800 true V34 bis from £199. Finance available (subject to status). Why not give one of our Engineers a call & get help on selecting your upgrade or new computer system. You will not have to listen to music, you will not be held in a stack, because we have 4 lines you probably won't get the engaged signal. Why should you phone us? Since 1990, thousands have.

(Graham Jacobs has been selling PCs since 1981)

TEL (01332) 20 53 53 FAX (01332) 20 53 63

Units 2&3 The Business Centre, Beaufort Street, Derby DE21 6AX

Members of PCMA & NASCAR - Licenced Credit Brokers

Prices & Specifications correct at time of going to press E&OE.

©1995The Intel Inside and Pentium Processor Logos are the registered trademarks of the Intel Corporation

If you don't see what you want, please call, we probably stock it.
If you can find a better price, please call, we will try to beat it.

If we tell you that an item you order is in stock, and you don't get it within 10 days, it's FREE.

Our promise to you;

- We will try to beat any genuine offer.
- We keep hundreds of titles in stock.
- We never surcharge credit/debit cards.
- Cards only charged after goods are sent.
- We are always friendly & helpful.
- We are available 9am to 9pm every day.
- We never mislead you about our stocks.
- We never quibble about returns.

Optional membership scheme;

- Bi-monthly catalogue & disk.
- Money saving discount vouchers.
- Bonus point scheme.
- Monthly prize draw.
- Free competitions & more.....

Membership Rates

	UK	EEC	WORLD
FULL YEAR	£7.00	£11.00	£14.00
HALF YEAR	£4.00	£6.00	£8.00

Call our sales hotline now (9am to 9pm).

01785 813355

Prices correct at time of going to press (14.7.95). E & O.E.
Prices and offers may change without notice. Some items may not be available at time of ordering.
Zone 1 Ltd. Dresden House, The Strand, Longton, Stoke-on-Trent, Staffordshire. ST3 2PD.

Programming

Answered by Dave Jewell

Clipboard access

Q How can I get a copy of the text on the Windows clipboard into my Visual Basic program? I'm trying to write an improved version of the Clipboard application.

Andrew Petit, Lancaster

A Visual Basic has a special global variable called **Clipboard** which provides access to the Windows clipboard system. Using this variable, you can read the contents of the clipboard, copy data to the clipboard or simply interrogate the clipboard to discover whether it currently contains text or graphical data. To show how easy it is I wrote a small clipboard sniffer program called CLIPSHOW, shown in the screen shot below. It displays any text information on the clipboard.

The screen shot bottom left shows the source code. This uses the **Clipboard.GetFormat** method to discover whether any text is present. If so, the **Clipboard.GetText**

routine is called to retrieve the text string, which is then loaded directly into a label control's **Caption** property. If there isn't currently any text on the clipboard, then the string [empty] is displayed instead.

Unfortunately, the only way to find out if the clipboard contents have changed is to ask. I

“Unfortunately, the only way to find out if the Clipboard contents have changed is to ask”

MS-DOS File Attributes

Attribute	Meaning
Archive	Files with this attribute are those that have been modified since the last backup.
Hidden	Files with this attribute are not displayed by the command prompt or Windows Explorer.
Normal	Files with this attribute are those that are not hidden, system, or read-only.
ReadOnly	Files with this attribute cannot be modified or deleted.
System	Files with this attribute are those that are hidden and have the Read-Only attribute set.

used the timer control. By initialising the timer's **Interval** property to 100 and setting up the routine shown below as the **Timer** routine, the

code is called about ten times a second. It's probably the simplest way of keeping the clipboard data display up to date.

Finally, you might like to try running the CLIPSHOW program and – while it's running – pressing the [PrintScreen] button on your PC's keyboard. As soon as you do this, the program displays the [empty] string, because PrintScreen copies a graphical image – the current screen contents – to the Windows clipboard, replacing any text. If you want to handle text and graphics in your improved Clipboard viewer, you need to incorporate a picture box or image component as well.

Showing invisible files

Q How can I find out what files are hidden on my hard drive?
William Perminov, Bude

A MS-DOS supports a number of file attributes, as shown in the top right picture. Both the System and Hidden attributes affect whether or not a particular file is displayed when you use the **DIR** command from DOS. If either of these is set the file is hidden.

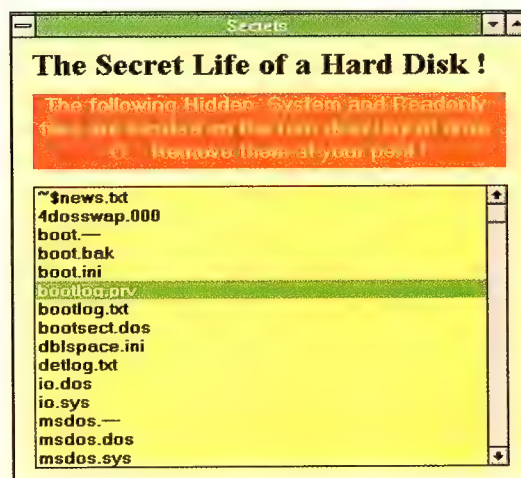
The simplest way of showing hidden files is to use a file list box. This Visual Basic control has a number of properties which correspond to the MS-DOS

attributes we've just looked at. These properties are named as follows: **Archive**, **Hidden**, **Normal**, **ReadOnly** and **System**. They're all Boolean properties, so they can be true or false.

If you set the Archive property, then the file list box displays files which have the Archive attribute. Setting the Hidden property includes those files which have the hidden attribute, and so on. Pretty straightforward stuff.

The program shown above right is called **SECRETS**. It has only one job in life – to hunt out and display all the hidden, system and

◆ This table shows the available MS-DOS file attributes. Some of them, notably the sub-directory attribute and the Volume Label attribute don't really apply to 'files' at all. They simply use a DOS directory entry as a placeholder for other information



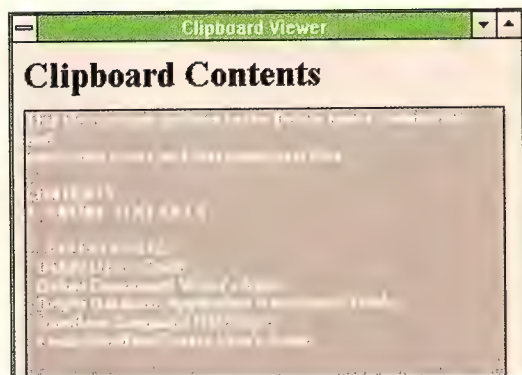
◆ Party time in the root directory of drive C:. If you've got Windows 95 and Windows NT installed, you'll see something like this too...

read-only files in the root directory of your hard drive. All you have to do is set up the Path property of the file list box to C:\. There's no other code involved. The file list box properties are set as shown below:

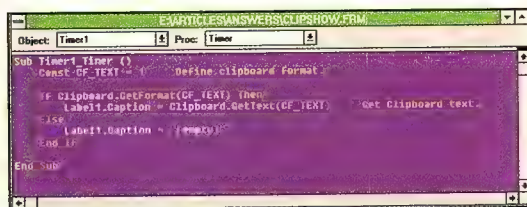
Archive	False
Hidden	True
Normal	False
ReadOnly	True
System	True

You might be rather surprised by the large number of hidden, system files in my root directory. Although MS-DOS only uses a couple of hidden files – **io.sys** and **msdos.sys** – I've also got Windows/NT and Windows 95 installed on my system. With this sort of configuration, you'll find that there's quite a party going on in your root directory. The golden rule with all these files is leave them well alone unless you're very sure of what you're doing.

Incidentally, if you want to change the attributes of a file under program control just use the Visual Basic **SetAttr** routine.



◆ A clipboard 'sniffer' program that displays any text currently on the Windows clipboard



◆ This code fragment illustrates the use of the **Clipboard.GetText** routine to retrieve any data that's on the Windows clipboard

Comms Expert

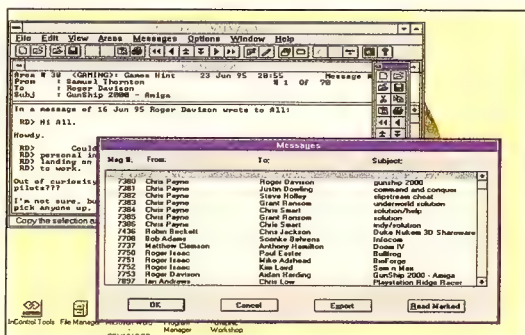
Answered by Steve Patient

Off line e-mail

Q The phone bill has just come and it's huge, so I've decided to economise. The first thing I need is an off-line mail reader – OLMR – for bulletin board work. Any suggestions?

Jon Darwin, Penzance

A We favour Blue Wave for DOS sessions or Wave Rider for Windows. These work with BBS systems using Remote Access, the most popular BBS software. We've put them on the CD-ROM for you to try out.



◆ With Wave Rider you can read and write e-mail off-line, which costs a lot less

Speed kings

Q What's the fastest modem I can buy? It seems that every time I log on, the files are even larger than the last time. It's costing me a small fortune.

Katherine Longman, Carlisle

A The fastest you can use on a dial-up connection is V34, which is nominally 28,800 bits per second. However, your mileage can vary. V34 modems use on-the-fly compression techniques. If you send a .BMP file, for example, you get a far higher apparent transfer rate, as the file is compressed for transmission and decompressed on arrival. A compressed file, a .zip for example, will download at about 3,500 characters per second.

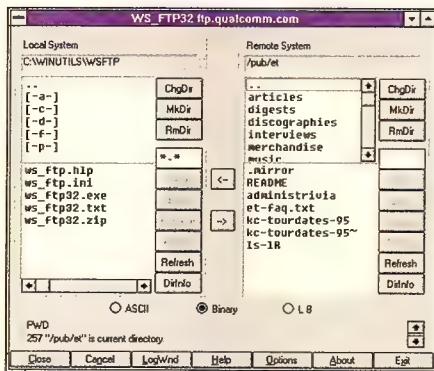
It seems likely that modems won't go any faster than V34. They already use techniques so arcane they require a pact with the devil to work at all – well, OK, they're not quite that difficult. The next step is ISDN, which we'll be looking at soon.

Dirty calls

Q Sometimes, when I log on to a bulletin board system – BBS – I get lots of spurious characters on the screen. If I try to download a file, I then get a lot of errors. What can I do to prevent this?

Harold Mathews, Doncaster

A You have what's known as a dirty line, which means it's generating random clicks and hisses that your modem interprets as legitimate characters. If it isn't your local line you can fix it by logging off and dialling again. If the problem is persistent, you can have the line checked by BT – 151 for residential lines, 154 for business lines. It's worth capturing a few minutes of messy screen to demonstrate the problem to the engineers, who may not feel it's as serious as you do.



◆ You can download files from any computer on the Net running FTP server software

IP numbers

Q What, exactly, is an IP number, and why do I need one? My Net access is via CompuServe but I have a friend at college who appears to be connected all the time. He has software that enables others to FTP – or download – files from his PC, but says I need to know my IP number to run it myself. Do I have one?

Terry Gardener, Hull

A An IP address takes the form of four numbers lower than 256 separated by periods. It's your Net address. The human friendly addresses you use – such as futurenet.co.uk – are useless to Net software. It first has to be translated into an IP number. Most Net software will accept the IP number as an address as well as the human friendly form.

The software he's running is known as an FTP demon. When you use FTP software to access his PC, this confirms your access rights, usually by demanding a name and password which, no doubt, he gave you.

Dial-up Net users are allocated a temporary IP address each time they connect. Your friend has a 'real' Internet computer with a permanent IP number. You should be able to run an FTP server on a dial-up PC, though.

MIME and UUencode

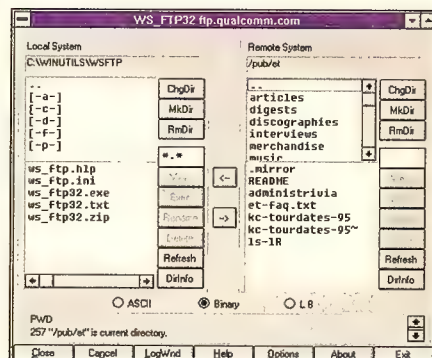
Q I have recently downloaded some files from a newsgroup. They're in MIME format. It looks exactly like a UUencoded file to me, but my software can't, apparently, recog-

nise the format. Can you tell me how I should go about decoding it?

Mel French, Leeds

A Binary files are UUencoded to change them from 8-bit to 7-bit format, because many older systems can only work with 7-bit characters. MIME is a format used for e-mail attachments which, while similar to standard UUencoding schemes, isn't compatible with them – that would be too easy. Why people choose to post MIME encoded files is a mystery.

A program called Mpack is supposed to be able to decode these, but we couldn't get it to work, so we aren't putting it on the CD-ROM. As it stands the only solution is to have it reposted in a more useful format. **PC ANSWERS**



◆ You need a UUencoder/decoder to rebuild most binary files uploaded into Net newsgroups



On CD and Disk:

CLIPSHOW.EXE

Compiled version of the CLIPSHOW program. You will need to have VBRUN300.DLL to run this application

CLIPSHOW.FRM

The form file for the CLIPSHOW project – it's an ordinary text file so you can examine the code with an ordinary text editor, even if you don't have Visual Basic

CLIPSHOW.MAK

This is the CLIPSHOW program's project file

SECRETS.EXE

Compiled version of the SECRETS program. You will need to have VBRUN300.DLL to run this application

SECRETS.FRM

The form file for the SECRETS project – again, it's an ordinary text file

SECRET.MAK

This is the SECRETS program's project file

WAVE RIDER

Windows off-line mail reader only on the CD

BLUE WAVE

DOS off-line mail reader only on the CD

INKJET USERS! - SAVE ££££

REFILL SYSTEMS - QUALITY BS5750
THERMAL INK RECYCLING SERVICE
- ULTRASONICALLY CLEANED.

Cartridge Reference	Recycle Service	Twin Refill
Canon BC01/02 Bk	£7.99	£7.99
Canon BJ1201 Bk	£3.99	£3.99
Canon BJ1201CM or Y	£4.49	£4.49
HP Deskjet 08/33A Bk	£7.99	£7.99
HP Deskjet 51626A Bk	£9.99	£9.99
Epson Stylus 025 Bk	£5.99	£7.99
Epson Stylus 031 Bk	£7.99	£7.99
Epson Stylus 034 Bk	£8.99	£8.99
Epson Stylus 036 Col	£13.99	£17.99

Further Quantity Discounts Available
Bulk Ink Packs available in 250ml and 500ml.
All prices include V.A.T. use of Freepost
Service for sending empties/orders and 1st
class return. Next day delivery available
on Refill Systems. Recycling Service and
Refill Systems for over 170 printers:-
write call fax or free price lists:-

Cartridge Express - Ref PCA Freepost
LS5373, Ripon, North Yorkshire HG4 1BR
Tel: (01765) 690790 Fax: (01765) 608877
Trade Enquiries Welcome.

CD - RECORDABLE
12min 200MB
53min 560MB and
74min 740MB (unformatted)
Printed and unprinted disks
available from stock

For further details please contact
P.M. CONSULTANTS LTD.
12 LAURA HOUSE, JENGERS MEAD,
BILLINGSHURST, WEST SUSSEX RH13 9PS
TELEPHONE: 01403 782612
FACSIMILE: 01403 782593

CD MASTERING AND REPLICATIONS
SERVICE
AUDIO • ROM • INTERACTIVE • VIDEO

STOCKISTS OF CD BOXES AND TRAYS
(ALL FORMATS)

Trade enquiries welcome

**HAVE YOUR FAVOURITE PHOTOS
TRANSFORMED INTO WINDOWS
WALLPAPER & SCREENSAVERS**
(e.g. Children, Lovers, Pet, Holiday Scenes etc.)

Any size order - from just 1 photo to your
entire collection
(which could be saved onto CD-ROM)

Our Service is Fast & Professional & at a price
nobody will beat! Contact us for all your Text
& Image Scanning & D.T.P. Requirements

SWIFT COMPUTER SERVICES
Tel: 01705 796221
2nd Floor, 13 Portsmouth Rd, Cosham, Hampshire PO6 2PL

ARGO SYSTEMS

At Argo Systems we pride ourselves on our service - both before and after sales. If you have any questions on our products or need advice, our friendly, courteous staff will be happy to assist you. We will always advise what is best for you, as we want to keep you as a satisfied customer. If we can't answer your question straight away we will call you back with an answer as soon as we can. If you don't see what you want on our price list, please ask - we can probably get hold of it.

SPECIAL OFFERS THIS MONTH
Buy OS/2 Warp 3.5" for only £55.00 when you purchase any of our fax-modems.
Buy a Motorola Orange Phone from us (Price £99.95 inc VAT) this month, and we will give you a voucher worth £25.00 against the price of any of our range of computer components. Or if you choose, we will supply a free high capacity NiCad battery worth £25.00.

Alternatively buy a Nokia Orange Phone from us (£199.99 inc VAT), and we will give you a voucher worth £39.00 against the price of any of our range of computer components. If you prefer, we will supply a free super high capacity NiCad battery worth £40.00.
Remember, if you are offered a better price than ours, we will do our best to beat it!

GRAPHICS AND VIDEO CARDS

VL	Cirrus Logic 5149	1Mb DRAM expandable	£33
PCI	Cirrus Logic 5434	1Mb DRAM expandable	£63
VL/PCI	Diamond Stealth 64	1Mb DRAM expandable	£98
VL/PCI	Diamond Stealth 64	2Mb DRAM upgrade (1 to 2Mb)	£40
PCI	Diamond Stealth 64	2Mb VRAM	£135
PCI	Diamond Stealth 64	4Mb VRAM	£235
PCI	Diamond Stealth 64 Video	2Mb DRAM	£145
PCI	Diamond Stealth 64 Video	2Mb VRAM expandable	£189
PCI	Diamond Stealth 64 Video	4Mb VRAM upgrade (2 to 4Mb)	£135
PCI	Detapath Tornado	4Mb dual-ported VRAM	£399
PCI	Detapath Tornado VP	4Mb dual-ported VRAM	£449
ISA	Video Galaxy Gamma	TV Tuner/Video Capture	£150
ISA	Video Galaxy Teletext	Teletext Upgrade for Gamma	£27
ISA	Video Galaxy MPEG	MPEG Upgrade for Gamma	£118
ISA	Video Galaxy Oscar	MPEG Decompression Board	£175
ISA	Bluepoint Movies MPX-3	MPEG Decompression Board	£145

I/O AND DISK CONTROLLER CARDS

ISA	Super I/O (2 serial, 1 game) with IDE	£9
ISA	Super I/O (2 serial, 1 game) with IDE	£13
VL	I/O with modes 3 & 4 Enhanced IDE	£14
VL	Super I/O with modes 3 & 4 Enhanced IDE	£16
VL	I/O with modes 3, 4, & 5 Enhanced IDE	£25
VL	Super I/O with modes 3, 4 & 5 IDE and on-board BIOS	£37
VL	Promise Cacheing EIDE (4 SWAM sockets - up to 16Mb)	£186
VL	FAST SCSI-2 with mode 3 EIDE (RHDD only) and Super I/O	£282
PCI	Enhanced IDE - modes 3, 4 & 5	£29
PCI	Enhanced IDE - modes 3, 4 & 5	£29
PCI	NCR 53C80 FAST SCSI-2	£49
PCI	NCR 53C80 FAST SCSI-2 with on-board BIOS	£52
PCI	Tekram cacheing EIDE (4 SWAM sockets - up to 16Mb)	£105
PCI	Adaptec 9940 SCSI-2	£167
PCI	Adaptec 9940W WIDE SCSI (up to 20Mb)	£175
PCI	Buslogic FAST SCSI-2 (superior spec to Adaptec)	£175
PCI	Buslogic FAST WIDE SCSI-2 (up to 20Mb)	£199

IDE DRIVES SCSI DRIVES CD-ROM DRIVES

425MB	£115	540MB IBM	£169	Aztech IDE x 2	£75
545MB	£130	730MB Quantum	£185	Aztech IDE x 4	£135
730MB	£159	1GB IBM	£245	Toshiba EIDE x 4	£130
£50MB	£169	1GB ConQuant	£310	Panasonic EIDE x 4	£140
1GB	£239	2.1GB Conner	£345	Pioneer EIDE x 4	£215
1.2GB	£190	2.1GB Micropolis	£335	Goldstar EIDE x 4	£119
1.2GB	£245	4.3GB Micropolis	£645	Mob-7 SCSI x 2 Jukebox	£259

SOUND CARDS

Argo	Pro16	Drivers and config software only	£43
	Sound Blaster Pro	Windows Sound System, Ad Lib and MPU401 compatible, 16-bit CD quality stereo playback and record at up to 48KHz, Enhanced 4 operator and 50-voice Stereo FM Synthesis. Interfaces for Sony, Panasonic, Mitsumi and IDE CD-ROM drives.	
Aztech	BXII	4 software titles	£33
Aztech	Pro 16	4 software titles	£65
Aztech	Nova 16	15 software titles, headphones, mic	£80
Aztech	Waverider 38+	15 software titles, headphones, mic	£95
Aztech	3-D upgrade	3-D sound upgrade for Waverider 38+	£25

MULTIMEDIA SPEAKERS

Amplifier	Dimensions	Controls	Price
10W	5" h x 3.5" w x 3" d	boom/tone	£12
25W	7" h x 4" w x 6" d	power/vol/bass/treble	£15
80W	8" h x 5.5" w x 6" d	power/vol/bass/treble	£28

CPUS - MEMORY - PARITY/NON PARITY

Cyrix	DX2 66MHz	£45	1Mb	30 pin	£25**
Cyrix	DX2 80MHz	£46	4Mb	30 pin	£29**
AMD	DX2 80MHz	£71	4Mb	72 pin	£115/£299
AMD	DX4 100MHz	£78	8Mb	72 pin	£225/£305
Intel	Pentium 75	£185	16Mb	72 pin	£325/£335
Intel	Pentium 90	£235	32Mb	72 pin	£685
Intel	Pentium 100	£315	4Mb EDO	72 pin	£119
Intel	Pentium 120	£365	8Mb EDO	72 pin	£125
Intel	Pentium 133	£735			

MOTHERBOARDS - ALL INCLUDE 954MB CACHE

486SX 3 VL	4 ISA slots Takes 4 x 30 pin 2 x 72 pin SIMMS	£66
486SX 3 PCI	4 ISA slots Takes 4 x 72 pin SIMMS IDE on board	£66
486SX 3 PCI	4 ISA slots Takes 4 x 72 pin SIMMS I/O and EIDE	£99
486VP 3 PCI	4 ISA, 2 VL slots, 4 x 72 pin SIMMS I/O and EIDE	£115
Our Pentium Boards take 4 x 72 pin SIMMS and have PCI and ISA slots		
MBP1 75/90/100 MHz	3 PCI, 4 ISA, 2 VESA Local Bus (VLB) slots All above MBP1 have 2 x 16555 serial ports, 1 enhanced parallel port, and support up to 4 EIDE devices, including IDE CD-ROMS	£125
MBP2 75/90/100 MHz	4 PCI, 4 ISA, SIS chipset, AWARD BIOS	£139
MBP3 75/90/100 MHz	3 PCI, 4 ISA, Intel Triton chipset	£190

TAPE BACKUP - REMOVABLE AND FLOPPY DRIVES

3.5" Hitachi floppy drive	£30
Iomega tape drive internal 250Mb drive/cartridge	£89/£12
Iomega tape drive internal 420Mb drive/cartridge	£110/£14
Iomega tape drive internal 700Mb drive/cartridge	£125/£15
Iomega tape drive parallel 700Mb drive/cartridge	£205/£15
Iomega ZIP drive 100Mb inc cartridge/cart	
up to 200Mb with compression - specify parallel/SCSI	£144/£14
Iomega Bernoulli drive transportable 250Mb/cart	
up to 450Mb with compression - hard disk speed - SCSI	£395/£79
25way to 50way external SCSI cable	£20
needed for Zip SCSI on PC if you already have SCSI	

NETWORKING PRODUCTS

ISA	Novell Approved NE2000 Compatible Jumperless BNC	£21
ISA	NE2000 Compatible Jumperless BNC and UTP	£25
VL	Ethernet Adaptor BNC and UTP	£25
PCI	Ethernet Adaptor (DEC Chipset) BNC and UTP	£29
	Pocket Ethernet LAN Adaptor BNC	£49
UTP 8	Port Hub/Concentrator	£95
UTP 16	Port Hub/Concentrator	£180
Printer Server	Single Printer	£130
Printer Server	3 Printers (2 Parallel, 1 Serial)	£210
9m, 5m, 10m, 20m	Thin Ethernet Cable with Plugs	£3, £5, £8, £12
Ethernet	Terminator	£15
RJ45	Cable per metre 2 pair/4 pair	£0.75/£1.30

MODEMS

non BAST Approved with BiffFax/BitCom for Windows software and UK telephone lead:		
14-4i	internal 14,400 data, up to 57,600 with V42bis data	£49
14-4e	external compression, 14,400 send/receive fax	£59
voice internal	As 14-4i with voice facility	£60
voice external	As 14-4e with voice facility	£82
28.8i	internal V34 data (28,800) up to 57,600 with V42bis	£105
28.8e	external data compression, 14,400 send/receive fax	£115

SOFTWARE

OS/2 Warp (3.5")	£30
MS-DOS 6.02 + Windows 3.11 (OEAM)	£60
MS-DOS 6.02 + Windows for Workgroups 3.11 (OEAM)	£75
MS-Works v3 (OEAM)	£35
TopLevel Complete Works - excellent Works package	£48
Tool 2 CD - play the sequel to the hit novel	£195
Anyview Professional - Windows Memory Manager and Accelerator	£25
Up to 25% faster Windows Performance Works with any card	
Microsoft Office 4.3 Professional (3.5")	£235
Microsoft Office 4.3 Professional (CD)	£195

CALL OR FAX US NOW ON (01203) 251622

Prices exclude VAT and delivery - E & OE
ARGO SYSTEMS - 8 Treadham Road, Coventry CV1 5SD - sales@argosys.demon.co.uk

Kernel Data Systems
28 Tunmarsh Lane, Plaistow,
London E13 9NF
Tel: 0181 - 471 2186 Mobile: 0831 879910

Make your PC earn its keep!

Have you ever taken the time to think of how much money you have parted with over the years on your PC? Higher capacity Hard Disk, more RAM, not to mention software!

ISN'T IT TIME YOU STARTED TO REALISE THIS INVESTMENT?

For details on how to make your PC pay for itself many times over, fill in your name and address below and post it to us

TODAY for your FREE information guide.

Name

Address

Post Code

PROBLEMS TRANSFERRING DATA BETWEEN DIFFERENT COMPUTERS?

Frustrated by incompatible disk formats / sizes?

We can transfer your data between

Amstrad PCW / CPC / BBC / IBM / Apple Macintosh / Apple II / Amiga (3" / 3.5" / 5.25") Text/Image Scanning

Details: (SAE please) **Mapej (PCA)**, Digby James, Meadow View, Quinta Crescent, Weston Rhyn, Oswestry, Shropshire SY10 7RN
Tel: (01691) 778659 Fax: (01691) 777638

SCANFAX

WHY BUY A SCANNER WHEN YOU HAVE A FAX MACHINE

With this device you can now use your Fax machine as an A4 Scanner without using the telephone line.

FOR ONLY £35.00

Postage/Packing included, no VAT charge
For more information or technical advice
Tel: 01352 713992
Fax: 01352 713992

9am - 8pm 7 days a week or send cheque or pay by credit card to Scanfax, Newlands, Pen-Y-Ball Hill, Holywell, Clywd CH8 8SZ

WISE OWL SOFTWARE
DISKS £2.00 each or SIX for £10.00
32 Charney Ave, Abingdon OX14 3NY
Free catalogue and advice 01235 529808

Ideal for Beginners • 500+ titles • Easy to use disks • Ages 2-16 plus
Specialising in educational programs and games for children
The only UK children's shareware library. Established 1991. Vast selection of educational titles for all types of IBM compatible PC (including low memory, no hard disk, monochrome graphics, Windows, 5" or 3" disks, CD ROM etc). We can fit something to suit your child. Useful applications for parents and teachers are also covered. Fast, personal service. Telephone enquiries welcome. Special Offers c Windows educational titles.
All orders sent by first class post within 24 hours of receipt.
PRICES INCLUDE POSTAGE & PACKING

CD-ROM MASTERING



YOUR DATA ON CD-ROM FOR JUST £30*

Garlieston Archive Service offer a full duplication and backup service from any size Disk, Tape, CD or Hard Disk, etc. to CD-ROM.

Up to 640Mb of your data may be stored on a single CD-ROM from just £30.00 excluding VAT & carriage.

For further details please call on

01803 553661

Garlieston Archive Service

71 Smallcombe Road Paignton Devon TQ3 3TJ.
Tel 01803 553661

WE HAVE MOVED. PLEASE NOTE OUR NEW ADDRESS

DX2-66 486's from £199 + VAT

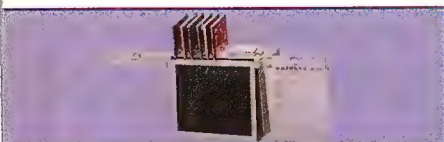
This is our fully fitted price for upgrading your clone 286/386 PC motherboard and CPU. Many other upgrades also available. Eg. DX2-80 £215 + VAT. Call now for full details and specs. Most PC hardware also available.

!!SHAREWARE!! £1 per HD Disk!

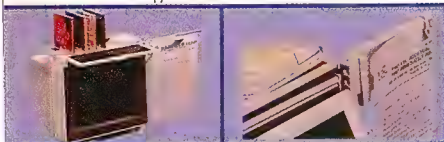
Call for our disk based catalogue

(01206) 764616

PERSONAL COMPUTER EMPORIUM LTD.



* Copy Holder can be used either side



* Screen can be stored out of the way

* Up & Down Adjustment

OPTICAL GLASS SCREEN FILTER

Eliminates 95% of Badlines & 99% of Glare. Incorporates KB Holder (fits up to 14 CPUs). Mouse Holder & Copy Holder.

Special Intro Price for PC Answers Readers - Only
£29.95 + £3.50 P+P (R.R. Price £59.95)

Direct Order Hotline:

0181 519 2000

Fax: 0181 519 1055

Please add V.A.T. @ 17.5%

SHAREWARE SIZZLERS!

BAYWATCH - PAMELA ANDERSON (2 HD DISKS - £4.00)

Yes it's that Baywatch star herself, Pamela Anderson, in this superb quality, glamour picture set. Includes V.Pic the viewer or use your own paint package. **OVER 18's PLEASE**

GAMES DISK 34

Contains 3 games - Diamonds; a VERY addictive puzzler, Gobman; a Pacman variant and the new superb graphical adventure **TEENAGENT**. This adventure is tough and sorts the men from the boys!

WINDOWS & DOS SCREEN SAVERS (1 HD DISK EACH)

A disk full of screen savers, one for Windows and one for DOS. Windows - Star Trek, Dinosaurs, Fish, Fractals, Fireworks, Springer Spaniels etc. DOS - Polygons, Einstein animations, Dogs, Fractals, Mirrors plus the highly-rated Phantom screen saver. Something for everyone!

THE GOLF DISKS (2 HD DISKS - £3.50)

2 disks packed with computer handicap systems for the casual weekend golfer up to full club level. Contains both DOS and Windows programs and also includes full tournament managers.

DIAGNOSTICS DISK 2

Contains 15 programs essential to your computer. IDE info, Pentium bug check, CD ROM performance checks, Sys tests plus many more. An essential utility disk.

EDUCATIONAL DISK 1

12 quality programs on this disk: Maths, Typing Tutor, Capitals, Music, Art, Spelling, English programs and so on. Mostly for the younger child.

TERMINAL VELOCITY (3 HD DISKS - £4.50)

A new fast and furious 3D shoot-em-up of the highest quality. Outstanding digital sounds and graphics make this a must for any game freak. 4 MEG & FAST 386/486 RECOMMENDED.

3D STEREOGRAMS (3 DISKS - £4.50)

This is a superb compilation of 3D stereogram pictures. The disks can be run as a slideshow direct from the disks if you wish. Contains both random dot and wallpaper images.

WOLFENSTEIN BUNKER ASSAULT

A new 10 level megablast for the registered version of Wolfenstein 3D. Lots of traps, puzzles and of course violence. What more do you want from a game? A must for Wolf fans.

DOS 6.22 UPGRADE (2 HD DISKS - £4.50)

The official DOS upgrade. Now with Drivespace and improved CD Rom caches. Will upgrade any version of DOS 6 only, i.e. 6, 6.1, 6.2. Will not upgrade earlier versions, i.e. DOS 5. THIS IS OUR NO 1 SELLING TITLE.

CRACK 2 (1 HD DISK - £3.00)

This is the update to our best-selling utility Crack 1; fully revamped with many extra programs added. Rawcopy 2, Neverlock 2, Hack 94, Zenhack, Crack Aid. Will back up lots of protected software.

C/C++ PROGRAMMING DISK

9 programs for users interested in the C language; tutorials, examples, compilers etc. Everything the budding C programmer will need. Our best-selling programming disk.

ADULT GLAMOUR PACK 2 (3 HD DISKS - £5.00)

3 more packed disks of quality pics for the adult glamour enthusiast. Includes the excellent viewer program V.Pic with full documentation.

OVER 18's ONLY PLEASE

F-PROT 2.18A

In our opinion, and our customers too, this is the best virus checker around. This one really does reach the parts the others never reach! Try it and see. Latest updated version.

ALIENS X - ALIENS TC

The best add-on to date for REGISTERED DOOM 1 and DOOM 2. ALIENS is for DOOM 1 and contains 3 HD DISKS and requires an extra 7MEG of HARD DRIVE SPACE and contains 27 new levels. ALIENS TC is for DOOM 2 and requires an extra 4MEG of hard drive space. Both contain excellent sound effects from the film and mean Aliens!

ALIENS X 3 HD DISKS - £4.50 ALIENS TC 2 HD DISKS - £3.00

RISE OF THE TRIAD 1.2 (3 HD DISKS - £4.50)

This is Apogee's answer to the game Doom and what an Answer! Superb graphics and sounds with brilliant playability. Contains eight huge sprawling levels. Latest version. 4 MEG REQUIRED

THE FRACTALS DISK

Nine programs for the Fractal freak! 3D Mandelbrot programs, mapping, landscapers and the magnificent Fractint.

CALENDAR GIRLS (2 HD DISKS - £4.00)

Two disks of knockout glamour pics from the world of calendar models. All in high quality 256 colour format. V.Pic; the excellent viewing program included or use any paint package.

PASCAL PROGRAMMING DISK

A total of 13 programs for the Pascal user or those interested in using this superb language. Tutorials, utilities, sprite animation and even comes complete with a compiler!

SPECTRUM EMULATOR + 50 GAMES (1 HD DISK - £3.00)

The best Spectrum emulator with 50 classic games: Manic Miner, Skooldaze, Bombjack, Chuckie Egg, Boulderdash, Match Day, Enduro Racer, Batman, Leaderboard plus many more. Really does turn your PC into a Speccy!

700+ SPECCY PROGRAMS AVAILABLE (SEE CATALOGUE DISK)

C64 EMULATOR + 60 GAMES (1 HD DISK - £3.00)

The C64 emulator comes complete with 60 classic C64 games. Remember Out Run, Boulderdash, Arkanoid, Beach Head, Donkey Kong, Dropzone etc. Nostalgia rules again!

EDUCATIONAL DISK 2

11 programs designed mainly for the older child - French, German and Spanish tutorials, Touch typing tutor, English Monarchs, Maths and Algebra tutor etc.

GAMES DISK 3

Our most popular games disk contains 18 games to suit all tastes: Scrabble, Monopoly, Blackjack, Trivia Quiz, Solitaire, Yahtzee plus many, many more. An ideal first games disk!

HERETIC EXTRAS DISK

14 new Wads files for use in the registered version of Heretic. Comes complete with Deathmanager, a menu-driven Wad loader and also all known cheats.

Proof of age required.

We do not condone or supply illicit or hardcore material

* CATALOGUE DISK 5 *

CONTAINS OUR LISTINGS PLUS FREE GAMES AND DISK DUPE 7 - THE BEST DISK COPIER AVAILABLE. SEND 4 FIRST CLASS STAMPS OR FREE WITH 1st ORDER



DISK PRICES

1 DISK - £2.50, 2+ - £2.00 EACH PLUS £1 P+P

PLEASE CHECK TITLES FOR INDIVIDUAL PRICES

Cheques & PO's made payable to N. Jordan please.

Send to **TELESCAN COMPUTER SERVICES**

(PCX) PO BOX 1, THORNTON-CLEVELEYS,

LANCS FY5 1SH

OR if you prefer, you can telephone your order with your

ACCESS/VISA card on 01253 829292

SES COMPUTERS

01277 220920

PC SPARES

P90 Processor.....£280.00

P75 Processor.....£225.00

DX4 100 Processor.....£105.00

DX2 66 Processor.....£55.00

Pentium Motherboard.....£99.00

486 Motherboard.....£75.00

30pin 4meg Upgrade.....£89.00

12pin 4meg Upgrade.....£100.00

540meg Hard Disk.....£130.00

850meg Hard Disk.....£170.00

14" SVGA Monitor.....£155.00

15" SVGA Monitor.....£210.00

Desktop/Mini Tower Case..£45.00

1meg SVGA VESA Card....£54.00

1meg SVGA PCI Card.....£54.00

Mitsumi Quad CD-ROM....£120.00

14,400 Fax Modem.....£82.80

28,800 Fax Modem.....£130.00

Microsoft DOS 6.22.....£35.00

Microsoft Windows 3.11...£40.00

3.5" Floppy.....£18.60

ISA I/O Card.....£7.59

VLB I/O Card.....£14.76

GAMES

Dark Forces.....PCD..£30.00

Football Glory...PCD/3.5"..£12.00

StarTrek: A Final Unity .PCD..£30.00

Voyages of Discovery .PCD/3.5"..£12.00

Simon The Sorcerer 2...PCD..£30.00

Bioforge.....PCD..£30.00

Full Throttle.....PCD..£32.00

Warriors.....PCD..£30.00

Descent.....PCD/3.5"..£30.00

Rise of the Triad.....PCD..£25.00

TO FIND OUT WHICH TOP MANAGER WEARS THESE SOCKS, READ TOTAL FOOTBALL



TOTAL FOOTBALL

THE ULTIMATE FANS' MAG

Issue 1 on sale
Thursday August 17th!

DREDD JUDGED

HAS HOLLYWOOD RUINED
JUDGE DREDD?

FIND OUT IN ISSUE 2
OF SFX,
THE SCIENCE FICTION
MAGAZINE

Future
Publishing



ON SALE 27 JUNE

Films, TV, Books, Comics, Video, Models and more...

ADVERTISERS' INDEX

AI Shareware	52	ICS	76, 109	Ridgeway	96
Argo Systems	110	Intermediates	49	Rushtech	109
Bit UK	36	Karlton-London	76	Scan Fax	110
Cartridge Express	110	Kernell Data	110	SCS	76
Casuti	106	Ladbroke	40	Serif	27
CD Rom Today	68	Mapej	110	SES Computers	111
Chemtec	109	Mega Download	109	SFX	112
Cozalux	111	Mighty Micro	30	Swift Computers	110
Data Becker	16	Mindscape	91	Telescan	111
Datatrade Marketing	75	Oasis	109	Time	79, 85
DTL	31, 72	Orchid	8	Total Football	112
E-Kom	106	PC Emporium	111	Virgin	15, 81
Emax	109	PC Format	94	Wearnes ... IFC - 3, 6 - 7	
Epic	70	PC Gamer	92	Western Systems	22 - 23
Euro Direct	64	PC Guide	28 - 29	Wise Owl	110
Futurenet	55	PD Selections	62	Worldwide Software	76
Gameplay	106	Phone Link	69	Zone One	106
Garleston	111	PM Consultants	110		
Graham Jacobs	106	Quantum Leap S/W	97		
Hobbykit	95	Quarterdeck	OBC		

PC Answers ten top tips for sensible buying by mail order

1. Before purchasing any computer, and before ordering, ensure the item you require is in stock. Ask the supplier's sales or delivery department and the return of faulty equipment. Make sure that there are no hidden costs, such as postage and packaging. Find out when you can realistically expect to receive your goods.
2. Always check your credit rating. If you are not a creditworthy customer, you may not be able to order by mail order.
3. Beware of companies that do not include postage and packaging in their prices. Also, avoid companies which do not include a return policy.
4. If you are the only person of interest in a particular item, it is best to order by mail order. If you are ordering goods of more than £100, it is best to order by mail order. If you are ordering goods of more than £100, it is best to order by mail order. If you are ordering goods of more than £100, it is best to order by mail order.
5. If you are not paying by credit card, pay by cheque. If you are not paying by credit card, pay by cheque. If you are not paying by credit card, pay by cheque.
6. Keep records of mail order buying by mail order. Keep a file of all the orders you place and all the orders you place. Keep a file of all the orders you place and all the orders you place.
7. If you are ordering goods by mail order, keep a note of the order number, the date and the price. If you are ordering goods by mail order, keep a note of the order number, the date and the price.
8. If you are ordering goods by mail order, keep a note of the order number, the date and the price. If you are ordering goods by mail order, keep a note of the order number, the date and the price.
9. If you are ordering goods by mail order, keep a note of the order number, the date and the price. If you are ordering goods by mail order, keep a note of the order number, the date and the price.
10. If you are ordering goods by mail order, keep a note of the order number, the date and the price. If you are ordering goods by mail order, keep a note of the order number, the date and the price.

◆ Fancy one of these to sit alongside your PC? Just answer the questions and it could happen. Good luck!

simply read on...

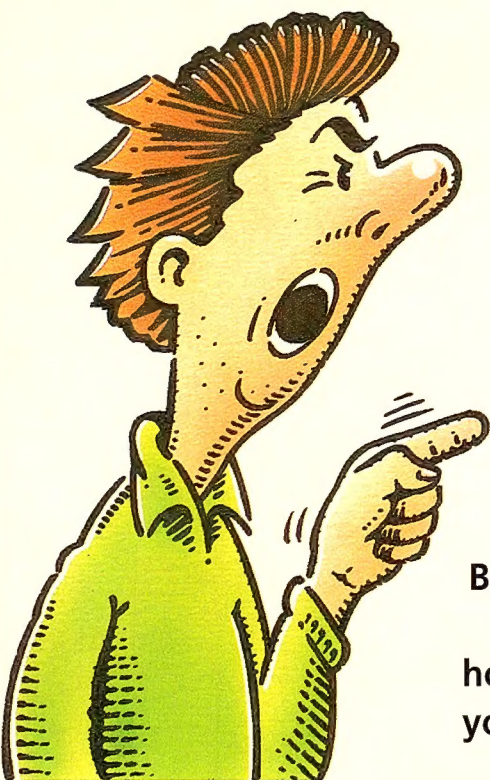
Simply answer the incredibly easy questions below, and send your answers to us on a stuck down envelope or postcard. **PC ANSWERS**

- 1 How many megabytes can each disk store?
- 2 Who makes the Zip Drive?
- 3 How much does each disk cost?

◆ Fancy one of these to sit alongside your PC? Just answer the questions and it could happen. Good luck!

5 The results will be in *PC Answers* issue 21 (November) on sale Thursday 28 September.

WIN! WIN! WIN! WIN! WIN! WIN! WIN! WIN!



THE GREAT DEBATE



Ben reckons art is that stuff you see in the Louvre, it's by dead people who knew how to draw faces. Bill believes art is what you make it, and whether or not you make it on a computer is irrelevant – PC on!

Ben is against...

The proper subject for art is the human form, and you draw it, paint it or sculpt it – what you don't do is sit in front of a PC, peering closely at a goose-bumped bod while attempting to make your mouse produce a lump-free curve.

Sure, I don't deny that there are some quite interesting pictures coming out of PCs, but, on the whole, the input from the so-called 'artist' is minimal. Take a look at that Latham character, for example, in last month's news feature. All he does is writes a few equations, clicks on OK and then wanders off for a relaxing afternoon of beer and skittles. The PC does it all for him.

That's hardly art is it? I mean, any fool can write a program to produce pretty patterns on the screen. Where's the suffering, the starving in a garret, the extraction and examination of the soul? What is this man saying to us about the human condition?

Nothing, that's what. Computer 'artists' are just techie twiddlers, more interested in what their graphics packages can do for them than they are in communicating with an audience. What can you learn about life sitting in front of a PC? How to avoid it, that's what. Look at Van Gogh: great art grows out of suffering, not equations – cutting off your ears, rather than real life.

As for the rest of them, scanning in other people's drawings, paintings, photographs and so on and then copying, pasting and running a few filters over the result is all they do. They aren't making real art any more than those producing records made from manipulating the sampled work of proper musicians are making real music. At best it's all smoke and mirrors while at worst it's straightforward stealing.

Don't get me wrong, there are lots of pictures worth looking at, even hanging on your wall, that aren't art. Many of the images produced on PCs can be attractive, interesting, exciting, disturbing or any combination of these – but they can never be art because they aren't the product of a human hand guided by a human mind. They're the products of an Etch-a-Sketch toy on steroids.

Bill is for...

What would you know about art anyway? You don't even know what you like. I remember you taking down your green lady and charging elephants and putting up whale pictures instead when Boots changed its stock.

If people like you had their way, artists would still be looking for flat rocks on which to daub cartoon images of bison. Fortunately, you don't – artists are free to do what they've always done, which is seek new means of exploring the nature of reality and our place in it.

Using the PC for the expression of artistic ideas demonstrates its adoption into life's mainstream. It's a massive vote of confidence. Art means that the PC has outgrown its technical and business origins and has become a creative tool that can be used for a purpose as abstract as exploring the human condition.

This isn't because the PC has suddenly become easier to understand, mind. Many artists spend years acquiring the skills necessary to work in their medium of choice.

The PC enables artists to extend their work through space and time in a way canvas, books and film can't duplicate. Add the Internet and the PC enables art to interact with any number of people at the same time. It's possible to create public art without being commissioned by an insurance company with a new building to decorate.

As for the argument that the PC is doing all the work, why not put it to the test? We'll watch yours and see how long it takes to produce a Gauguin, or is that too much to ask? How about a Pollock? David Shepherd? No, it doesn't do anything at all, any more than a stick of charcoal or a brush or a chisel can produce a picture or sculpture without a mind holding a vision to guide it.

Face it, Philistine, the PC is a valid medium for artistic expression and you're a sad old Luddite who's yet to be dragged kicking and screaming into the 18th century. We're about to see an explosion of artistic endeavour based on the PC's ability to call so many kinds of vision into being. Show me yours and I'll show you mine. **PC ANSWERS**

All Prices include VAT.

ITEM	FORMAT	PRICE
		£
		£
		£
		£
		£
		£

Postage is **FREE** for all orders shipped within the U.K. Overseas postage - £2.50 per software item.

	P&P	£
TOTAL		£

Cheques payable to 'Gameplay'.
Prices correct at time of going to press. E & OE.

☐ ☐ ☐ ☐

PC ANSWERS

MORE DISK SPACE.

Uninstall

FROM THE PEOPLE WHO BROUGHT YOU MORE MEMORY.

Have you ever tried to clean up your system?

Then you know that removing all of the Windows™ apps, files and system components you don't want in order to make room for the things you do want is next to impossible.

Unless you have the right tool.

With Quarterdeck's new CleanSweep™ at your disposal, you can safely unclog your system and free up megabytes of precious disk space with the greatest of ease.

A DISK IS A TERRIBLE THING TO WASTE.

So before you blow a bunch of money on a new drive, grab your mouse and ask CleanSweep to analyse a program for you.

The long list of system files, DLLs, VxDs, Help files, .ini files, add-ons and other stuff that pops up on your screen will give you a pretty good idea of just how much disk space you've been wasting.

And since all those files are scattered all over your system, they're very hard to find. Which is why CleanSweep comes equipped with exclusive Helper Technology that understands the bizarre installation habits of popular Windows programs.

TO DELETE. OR NOT TO DELETE.

CleanSweep knows more than just where to look for the maximum number of files. It also knows what to do when it finds them.

And what not to do.

It also lets you view any file, confirm every action, undo anything you've done and even perform trial runs to see how much disk space you're about to gain.

Which is just the sort of ingenious functionality you'd expect from Quarterdeck, the people who brought memory management to millions with the legendary QEMM.®

LEAVE NO FILE UNTURNED.

To really get the most out of CleanSweep, you'll want to use it to track down and delete all kinds of duplicate, backup, archive, help and bitmap files.

Not to mention system components such as unneeded graphics drivers, forgotten fonts, unsightly wallpaper, old system files and unused screen savers.

But before you can even think about doing any of this, you'll need to see your nearest reseller – and ask for CleanSweep.

Or call Quarterdeck on 01245-496699.



Since uninstalling the wrong file – say, a shared DLL – can disable other programs, CleanSweep uses SuperLinks to track files that are needed by multiple applications.

Quarterdeck®